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* * *

HAPPILY EVER AFTER?

While there are no significant sociological studies relative to the incidence of sexual dysfunction in this country, a conservative estimate would indicate that half of the marriages in the United States are either presently sexually dysfunctional or imminently so in the future.

William Masters, M.D.

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LEAD POISONING IN WILMINGTON, DELAWARE

Plumbism, a problem known from antiquity, is presented in three local studies of inpatient, outpatient, and day care center children.

Elizabeth M. Craven, M.D.
Barbara B. Rose, M.D.
Vincenta Marquez, M.D.
Louis Sylvester, R.N.

This report reviews the problem of lead poisoning in Wilmington in three pediatric groups: 1) 23 hospitalized pediatric cases of lead poisoning from 1961-71; 2) 86 pre-school children who participated in a lead screening study (macro technique) in the Pediatric Ambulatory Services of the Wilmington Medical Center between June and September, 1971; 3) 85 day-care center children, who participated in a lead screening study (micro techniques) by the City-County Health Office during September and October, 1971.

I. HOSPITALIZED CASES 1961-71

Cases of lead poisoning admitted to the Pediatric Service of the Wilmington Medical Center, Delaware Division, from 1961 to March of 1971, were reviewed. Particular attention was paid to the patient's address, presenting symptoms and signs, blood and urine studies, x-rays of the long bones and gastrointestinal tract, methods of treatment, and follow-up after discharge. Information regarding the home situation and socio-economic status of each patient was obtained from Wilmington Medical Center Social Services, the City-County Health Office, and the outpatient records.

General Considerations

Nineteen children were admitted during the warmer months (July-September), and four children were admitted during the winter. Fourteen children came from the west side of Market Street, seven children lived in other areas of the city limits, and two children, who died, came from out of state. Fourteen of the twenty-three were second-born children. All families were classified as indigent.

Editorial comments appear on page 20.

Clinical Manifestations

There were twenty-three patients — seventeen Negroes, four Puerto Ricans, and two Caucasians. The ages ranged from twelve months to four years, with eighteen of the children being between two and three years of age. Five cases were found because their siblings were admitted for encephalopathy. There were fourteen males and nine females. Twenty cases had a definite history of pica. Other symptoms and signs are shown in Table I. Nine patients presented with seizures lasting more than thirty minutes, with or without antecedent stupor and/or ataxia.

Dr. Craven is Director, Pediatric Outpatient Services, Wilmington Medical Center; Dr. Rose is Deputy State Health Officer, City-County Health Office. Division of Public Health; Dr. Marquez was formerly a resident, Pediatrics, Wilmington Medical Center, and is now a Pediatric House Physician. St. Francis Hospital, Wilmington; and Ms. Sylvester is Assistant Nursing Supervisor, City-County Health Office, Division of Public Health.

TABLE I

Signs and Symptoms in 23 Cases

Pica	20
Vomiting or diarrhea	13
Irritability	12
Seizures	9
Anorexia	8
Stupor	6
Weight loss	3
Ataxia	2
Papilledema	2
Bilateral VI N. Palsy	1
Icterus (2° sickle crisis)	1

Laboratory and X-ray Data

Hemoglobin ranged from 6.1 to 12 gm. Seven patients with a hemoglobin level below 8 gm also had iron deficiency anemia or sickle cell anemia. Initial urinalyses were abnormal only in eight patients with varying degrees of albuminuria and/or glycosuria. Urinary coproporphyrin levels before treatment ranged from 9.5 to 210 mcg/100 ml. Blood lead levels (uncorrected values) ranged from 80 to 800 mcg/100 ml. The lowest lead level associated with seizures was 88 mcg/100 ml.

X-rays revealed paint flakes in the gastrointestinal tract in six cases, and heavy metal lines in the long bones in nine cases.

Treatment

Patients with lead levels of 80 mcg/100 ml and above were treated with BAL-EDTA.* Those with lead levels more than 120 mcg/100 ml required two courses of five-day chelation therapy to reduce their blood lead levels to 60 mcg/100 ml. Two patients with pretreatment levels of 209 and 242 mcg/100 ml required three courses of BAL-EDTA. In some cases, BAL-EDTA was followed by D-penicillamine (40 mg/kg/day) given as outpatients while carefully monitoring liver function tests, CBS, urinalyses, and blood lead levels.

There were two deaths, both admitted with seizures. One patient, who presented with papilledema and seizures, was admitted with the diagnosis of brain tumor. This child had anemia for seven months, with several episodes of seizures controlled with phenobarbital. Ventriculostomy was done. At postmortem, the blood lead level was 158 mcg/100 ml. The other patient, who had a lead level of 318 mcg/100 ml, died despite treatment with BAL-EDTA.

Current Neurologic Status

Among the seven living patients who presented initially with seizures, four continue to have a seizure disorder. Five of the twenty-one are moderately to severely retarded, including one who also has a hemiplegia and aphasia. Three patients, who did not have seizures but were extremely irritable with lead levels greater than 200 mcg/100 ml, currently have reading difficulties and are in special educational classes. The remaining thirteen patients have no gross neurologic deficit and are in regular classes in school.

Environmental Status

Home visits were made by the public health nurses, and samplings of paint and plaster were obtained. All cases were felt to be due to ingestion of paint and plaster, as documented by the analyses of the paint scrapings. Some of the homes were condemned and/or torn down, some were remodeled by the families themselves; however, lack of immediate funds for proper repair was apparent in all cases.

Summary

During a ten year period, twenty-three pediatric cases of lead poisoning were diagnosed. There were two deaths. Of the twenty-one living children, five are retarded and will ultimately require custodial care. Three children are receiving special education. The remaining thirteen are well.

II. SCREENING WILMINGTON MEDICAL CENTER AMBULATORY SERVICES — SUMMER 1971

A pilot lead screening program was done June through September 1971, in the Pediatric Outpatient Services of the Wilmington Medical Center. Patients selected were between the ages of two and four years, did not have known pica, and were seeking medical aid for a variety of minor complaints. A total of eighty-six patients were screened. (Table II)

---

*British Anti-Lewisite and Ethylenediamine Tetra-Acetic Acid.

TABLE II

BLOOD LEAD LEVELS IN 86 PATIENTS SCREENED

Blood Lead Level (mcg/100 ml)	Patients
Greater than 80	1
*Greater than 60	4
**50-59	9
40-49	16
30-39	25
Under 30	31
	86

* Four Positive EDTA Stimulation Tests.
** Nine Negative EDTA Stimulation Tests.

Five patients were admitted and treated with EDTA. Patients with lead levels over 40 mcg/100 ml were later rechecked, homes investigated, and social situations improved to prevent further problems.

Summary

Thirty (35%) of 86 patients had lead levels over 40 mcg/100 ml. Five (6%) of the 86 patients required treatment.

III. LEAD SCREENING PROGRAM IN MODEL CITIES AREA, FALL 1971

In August 1971 the Division of Physical Health was asked, by the Bureau of Community Environmental Management, Department of Health, Education and Welfare, to cooperate in a pilot study of the lead poisoning problem in Wilmington. They requested that the group be limited to no more than 125 children between the ages of one and six years who were living in pre-World War II homes, preferably in the Model Cities Area. As well as giving an index to the extent of the problem, the study planned to compare at least two different laboratory techniques and means of obtaining samples. The techniques selected were:

1. Fingerprick with sample drawn in a capillary tube which would be air-mailed to Environmental Sciences Associates Laboratory, Cambridge, Massachusetts. Blood lead level results for these specimens would be reported on the basis of the anodic strip method for lead analysis.
2. An 8 ml sample would be drawn by venipuncture and sent to the Baltimore City Hospital Laboratory where samples would then be analyzed by atomic absorption spectroscopy.

Procedure

Two screening sessions four weeks apart were projected. On the first screening, the fingerprick anodic strip determination was used as an initial screening procedure. All children whose blood samples had been determined at a level of 40 mcg/100 ml or above were recalled for a second screening where bloods were again analyzed by anodic strip (fingerprick) as well as atomic absorption. The latter samples were drawn by venipuncture. The Bureau of Community Environmental Management supplied all the necessary materials and paid for the analyses. In addition, they sent personnel and a portable lead detector for use in the field to detect lead in painted surfaces.

The role of the Division of Physical Health was to provide an appropriate population of children and nursing and clerical help, as well as environmental aides to assist in the random sampling of houses in which the children lived. The population for screening was drawn from two Day Care Centers — West Center City (55 children) and Sharon Temple (14 children) — and a Well Child Clinic (16 children), all in the geographic limits of Model Cities. It should be noted that various community workers were of tremendous help in explaining the program to parents, in obtaining permission for testing, and in handling the children.

The first screening was carried out on 85 children who, with the exception of one eight-year-old child and one ten-year-old child, were all between the ages of one and six years. Twenty-three were siblings. The mean age was three to four years. Capillary bloods were drawn following fingerprick, and samples for lead content analysis by the anodic strip method were airmailed to Massachusetts as outlined above.

Reference to Table III shows the following blood lead ranges: four samples 100 mcg/100 ml and above, four samples between 80 and 100 mcg/100 ml, and eight samples between 60 and 80 mcg/100 ml. The remaining samples were all below 60 mcg/100 ml. One sample in the 60 to 80 mcg/100 ml range was drawn from a six-year-old.

The eight reports of 80 mcg/100 ml or above were indeed cause for concern. However, no history of pica had been obtained, nor were the children symptomatic, by report. Since so short a time interval was involved between the reports of first and second screenings, it was decided to wait before proceeding with follow-up by referral to hospital.

Thirty-three children were presented for the second screening, four of whom were not present at the first screening. The remaining five children with blood lead levels above 40 mcg/100 ml were unavailable because of illness, etc. At this screening, bloods were obtained, both in capillary tubes from fingertips and by venipuncture. The former were again sent to Environmental Sciences Associates (anodic strip method). The 8 ml samples of venous blood, drawn at the same time, were sent to the Baltimore City Hospital Laboratory. At this screening, samples were also drawn from some children for processing by the Wilmington Medical Center Laboratory. The results of these two screening sessions are presented in Table III.

It can be noted that on the second screening there were no reports by the anodic strip method of 80 mcg/ 100 ml or more. However, five specimens were reported as having a blood level more than 70 mcg/100 ml by atomic absorption spectroscopy. These children were immediately referred to the Pediatric Outpatient Service of the Wilmington Medical Center. Further examination of the reports revealed a considerable disparity in levels between the first and second screenings as well as between the methods of testing of the same blood on the second screening. It was then decided to refer for follow-up all children who had demonstrated a lead level of 50 mcg/100 ml or more on each of the two screening sessions and to take paint samples in the homes involved in these referrals.

Medical Follow-Up

On this basis, twenty-four of the original eighty-five children (26%) were referred for follow-up. Two of these referrals were treated for lead poisoning and one of these served as an index case to a sibling who also required treatment. The remaining twenty-two of the referrals are considered at higher risk of developing lead poisoning. These are under observation.

Environmental Follow-Up

It should be born in mind that all children tested in this series came from an area in the city where the homes are of pre-World War II vintage. Paint with a high lead content has been used extensively in these interiors. In many, because of deterioration and lack of maintenance, flaking paint and plaster chips provide an obvious source of lead poisoning to the child exhibiting pica. "Paint with high lead content was used extensively in the interiors of dwellings built prior to World War II. The American National Standards Institute (formerly the American Standards Association) established a standard in 1955 limiting lead content of interior paint to 1%."[1]

As noted above, the referral for follow-up through the Wilmington Medical Center Outpatient Services was accompanied by a survey of the home environment. Since siblings were involved in the twenty-four referrals for follow-up, the number of homes surveyed was reduced to twelve. Public health nurses made home visits to each of these homes, discussed the importance of the problem of lead poisoning with the family, surveyed the home and obtained samples of loose paint and plaster chips, particularly from sites accessible to children. Usually eight to twelve samples were obtained in each home.

The samples so obtained were then sent to the Medical Examiner's Office where lead

TABLE III

Blood Lead Determinations Above 40 mcg/100 ml by Three Different Laboratory Techniques. Samples Drawn from Children 1-6 Years in Model Cities

		First Screening	Second Screening		
Number	Age	Anodic Strip 1	Anodic Strip 1	Atomic Absorp. Baltimore 2	Atomic Absorp. Wilmington 3
03	4	79	78	80,85,83,84,91	*15 (93)
04	4	45	51	54	*6.3
11	3	64	51	50	44
12	3	44	54	56	58.5
13	5	47		In school.	
20	4	54	39	72,70,71	*7.8 (35)
24	5	45	36	45	
25	3	57	47	46	
26	2	45		Sick	
27	3	45	40	43	*46.8
30	2	130	54	57	*63.6 (58)
31	8	51		Went to wrong place.	
32	2	47	47	40	
34	3	51	34	44	50
35	1	57	38	32	35
36	10	41		Went to wrong place.	
37	3	119	56	49	38
38	1	92		Moved out of state.	
40	2	88	37	33	
42	4	51	32	32	5
45	3	62		Sick	63.5
46	3	49	54	Q.N.S.	56
47	3	53		Sick	
49	2	105	38	83,83,80,80,78,80	94
51	2	43	38	38	
52	3	48	38	30	34
53	2	55	60	51	
55	2	51	39	50,48	
56	19 mos.	61	48	34	43
57	2	94	39	31	
61	4	58	58	45	
78	3	72		Not brought in.	44.3
79	3	60	46	41,36	49
80	2	67	70	71,76,72,70,76,74	68
81	6	64	40	44,39	44
82	2½	101	29	31,26	36.2
84	1	94	46	43	
85	3	55	52	40,37	
87	5	ND	60	49	34
88	4	ND	44	86,75,80	*16 (47.2)
89	4	ND	38	44	25.8

1. Anodic stripping voltammetry by Environmental Sciences Associates MASA 2014 trace metal analyzer.

2. Baltimore City Hospital atomic absorption spectroscopy: cell disruption of 2 ml of heparinized blood by ultrasonification. 2 ml 0.7 normal perchloric acid added and mixed. Sample then centrifuged at 6000 rpm for five minutes followed by filtration through a #507 filter paper. Reading made at 217 angstroms on an Instrumestation Laboratory Model #153.

3. Wilmington Medical Center, Delaware Division — 5 ml heparinized whole blood is hemolyzed with Triton, the lead chelated (ammonium pyrolidine dithio-carbamate, APDC) and extracted with an organic solvent (methyl isobutyl ketone, MIBK). The MIBK solution is aspirated into the burner of a Perlcin-Elmer Model 303 atomic absorption spectrophotometer, and a reading taken.

* Insufficient quantity; result considered doubtful; repeat value in parenthesis.

content was determined by atomic absorption spectroscopy. Reports of these analyses for lead content ranged from 0.1 to 24.1%. The results from each home were then studied individually. An arbitrary effort was made to establish ranges which would designate the possible danger of the lead paint contamination in that home. Those where the results demonstrated a lead content of under 1% were termed "low risk". Those in a range of paint content of 1.0 to 1.9% were designated "increased risk," and those where the lead content was above 2% were considered "serious risk". In these terms, the twelve homes fell into the following groups:

Group A	"Low Risk"	4
Group B	"Increased Risk"	4
Group C	"Serious Risk"	4

Obviously any house which has been occupied by multiple tenants over a period of 30 to 40 years would not be expected to yield consistent levels of lead in paint samples taken from various places in that house. In the above grouping, those placed in Group B yielded one or two samples pointing to a specific area of contamination which was deemed readily correctable, eg, a screen door. All houses were revisited by public health nurses. Since some of these houses in Groups A and B were owner occupied, public health nurses discussed the results of the analysis for lead with the families involved and advised specific corrections which should be made.

The three children who were diagnosed and subsequently treated for lead poisoning served as index cases for two homes placed in Group C. The remaining two houses in Group C are occupied by children who, on follow-up, were not considered in need of chelation and remain under observation. These four houses have all been referred to the City of Wilmington, Department of Licenses and Inspections, for enforcement of the Housing Code section which interdicts paint containing lead for interior use.

Comparisons of Yield in the Two Populations Screened

We found it of interest that these two screening programs were carried out on children of the same age group (under six years) and drawn from the same geographic area, Wilmington inner city. However, there were two variables. These were the time of year and the circumstances under which the children were presented for testing. Screening of children in the Wilmington Medical Center Pediatric Outpatient Service was carried out during the summer months of 1971 with the peak of activity in August. Initial screening of children in day care centers was done at the end of September, repeat screening four weeks later and referrals for follow-up in early November 1971. The second variable was the fact that one population was considered to have some medical problem of sufficient concern to warrant their being taken to the hospital, whereas the second population was considered to be in sufficiently good health to attend a day care center at the time blood tests were made. Table IV contrasts the yield in subsequently diagnosed cases between these two populations.

TABLE IV

Contrast in Yield of Diagnosed Cases Between Children Screened in Hospital OPD and in the Community

	Day Care Center	Hospital OPD	Total
Number Screened	85	86	171
Pb Blood >40 mcg/100 ml	29	30	59
Percent Elevated	34%	35%	34%
Received Chelation Therapy	3	5	8
Percent Treated of Total Screened	4%	6%	5%

As is evident in the series of hospital cases reported in this article and elsewhere,[2] the highest incidence of lead poisoning occurs during the warmer months. The time of year in which screening was done, as well as the overt health of the child at time of screening, were both variables between those two populations. Thus the small disparity of 1 to 2% in the yield of cases of lead poisoning is of interest.

On the basis of the above findings a mass screening program conducted in the summer months of children in the inner city of Wilmington might well be expected to yield approximately three to five cases of lead poisoning per 100 screened.

Summary

There were 85 children from 62 different homes. Twenty-four children from 12 of these homes exhibited blood lead levels above 50 mcg/100 ml or more on two different occasions of blood examination. These 24 children were referred for follow-up (26% of the group), and among them three children were treated for lead poisoning (16% of those referred for follow-up). Where children with blood lead levels above 50 mcg/100 ml were used as an index to the need for environmental survey, 12 of a possible 62 homes were involved (5%). Of these 12 homes, four were ultimately referred to Licenses and Inspections for enforcement of the City of Wilmington Housing Code. One of these homes still awaits correction, one has been corrected, and two have been condemned and the family relocated.

IV. COMMENTS

Where there is a high index of suspicion, the diagnosis of lead poisoning may be made with relative ease and some expense. However, there is one caveat in diagnosis which is certainly highlighted by reference to Table III. This clearly demonstrates the discrepancies in results from different methods of blood lead determinations[4] and points up the need for prior experience with the laboratory technique which is being used as a screening or diagnostic tool. Additionally, it is apparent that children, living in pre-World War II houses, who exhibit such symptoms as vomiting, irritability, fatigue and seizures, during the warmer months, should be considered at high risk of lead poisoning.[5]

Sequellae of plumbism range from learning disabilities to the need for permanent institutional care. The true incidence of learning disabilities due to undiagnosed lead poisoning is not known.[6,7,8] Estimates of the cost of life-time institutional care currently range from $250-$350,000. Prevention is of tremendous importance, primarily from a humane point of view but also in terms of costs to the taxpayer. We should be able to provide readily accessible and inexpensive means of answering the question of whether or not any given child is at risk in terms of lead poisoning. Furthermore, effective approaches must be devised to changing a child's environment so that the necessity for programs such as these becomes one of historical interest.

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* * *

FOR WHOM THE BELL TOLLS

No man is an Iland, intire of its selfe; every man is a peece of the Continent, a part of the maine; if a Clod bee washed away by the Sea, Europe is the lesse, as well as if a Promontorie were, as well as if a Mannor of thy friends or thine owne were; any mans death diminishes me, because I am involved in Mankinde; And therefore never send to know for whom the bell tolls; It tolls for thee.

John Donne (1573-1631)
Devotions Upon Emergent Occasions XVII

ARTERIAL BLOOD GAS MEASUREMENTS

The Clinical Usefulness and Limitations of Arterialized Capillary Bloods

Clinical measurement of arterial blood oxygen, carbon dioxide, and pH has increased rapidly in the last ten years. A survey of the medical literature reveals that studies evaluating the use of arterialized capillary blood to measure blood gases have been published in journals devoted primarily to the researcher and the internist. A precise definition of the usefulness and limitations of arterialized capillary blood measurements is presented. A standardized procedure of collecting arterialized capillary blood is outlined.

James M. Hofford, M.D.
Sidney Pell, Ph.D.
Ann S. Dowling, PuT.

There are many situations in which it is difficult to obtain arterial blood. Unfortunately, there are still many hospitals where there is a lack of personnel who are able to collect arterial blood samples properly. Taking arterial blood samples from infants can be difficult and may entail an excessive blood loss. There are patients in whom extensive burns of the body interfere with direct arterial puncture. The arterialized capillary blood can be taken by trained technicians and requires a relatively small amount of blood.

We propose in this article to evaluate the use of arterialized capillary blood samples. The reproducibility and accuracy of the values will be defined. The earlobe and finger pulp will both be evaluated as sampling sites. Factors limiting their use will be given.

Arterialized Capillary Blood will be abbreviated as ACB in this article.

Material and Methods

The instrumentation Laboratory Blood Gas Meter No. 113* is used for the analysis of blood oxygen, carbon dioxide, and pH. The meter is calibrated daily with gases and with blood perfused with known gas mixtures in an IL No. 137* tonometer.

All samples used for comparison in Tables I and II were obtained from hospitalized patients with various cardio-pulmonary disorders. The ranges of pH, pCO_2, and pO_2 were related to the patient's disease state or the amount of supplemental oxygen inhaled.

Arterial blood samples are drawn through a Cournand needle inserted in the brachial artery.

The arterialized capillary blood (ACB) is

Dr. Hofford is Chief of Pulmonary Diseases, Wilmington Medical Center; Dr. Pell is a biostatistician, Medical Division, the E. I. du Pont de Nemours and Company; and Mrs. Dowling is a technician, Pulmonary Function Laboratory, Wilmington Medical Center.

* Instrumentation Laboratory, Inc., 113 Hartwell Ave., Lexington, Massachusetts.

TABLE I

REPRODUCIBILITY

OF ARTERIALIZED CAPILLARY BLOOD MEASUREMENTS

	Range	No. Samples	Mean Difference ACB_1* — ACB_2	SD	SE	P
Finger						
O_2	0-100 mm Hg	20	0.20 mm Hg	1.27	0.28	0.1-0.5
O_2	100-500 mm Hg	20	0.50 mm Hg	10.40	2.33	>0.5
CO_2	0-50 mm Hg	20	0.15 mm Hg	1.23	0.28	>0.5
CO_2	50-100 mm Hg	20	0.10 mm Hg	1.54	0.35	>0.5
pH	7.36-7.62	20	0.00 pH units	0.00	0.00	>0.5
Earlobe						
O_2	0-100 mm Hg	20	0.15 mm Hg	1.42	0.32	0.1-0.5
O_2	300-600 mm Hg	20	5.00 mm Hg	19.40	4.34	0.1-0.5
CO_2	0-60 mm Hg	20	–0.40 mm Hg	2.16	0.49	0.1-0.5
pH	7.32-7.56	20	0.00 pH units	0.00	0.00	>0.5

*Arterialized Capillary Blood

taken in the following manner. A hot water bottle, with an average temperature of 50°C, is used to warm the hand or the earlobe for ten minutes until the skin reaches a temperature of about 40°C. Usually the middle finger is used. The area is wiped with a warmed alcohol sponge, and then, using a Micro-Lance Long Point,** the side of the finger pad or the tip of the earlobe is punctured deeply so that there is a free flow of blood. The first drop of blood is wiped away, and the next large, free-flowing drop is taken up with a 0.1 ml heparinized capillary tube. The lumen of the tube is filled all but about one-half inch. A small mixing flea is inserted into the tube and that end of the tube sealed with clay. The other end of the tube is closed with a Crito-cap.*** The blood is mixed by using a small magnet to pull the metal flea back and forth six to eight times inside the capillary tube to release the heparin and prevent clotting of the blood. Five separate 0.1 ml tubes are filled in the same way. During the entire collection, the patient keeps his finger on a gauze square on the hot water bottle. The blood containing tubes are placed in a bed of crushed ice and read as soon as possible. Prior to inserting the blood into the meter, it is again mixed. The flea and the clay are cut off the one end and this end placed into the meter. The Crito-cap is then removed, and the specimen drawn into the cuvette. One capillary tube is necessary for the pH electrode, and another tube to fill the cuvette for the pO_2 and pCO_2 readings. All readings are made and recorded in duplicate. Therefore, a total of 0.400 ml of blood is required for the analysis. The fifth capillary is taken as a reserve.

Accurate analyses depend upon good flow from the finger. The lancet must be inserted

---

** B-D Company, Rutherford, New Jersey.

*** Crito-caps-A-2940-Clay-Adams, Inc., New York, New York.

TABLE II

ACCURACY

OF ARTERIALIZED CAPILLARY BLOOD COMPARED WITH ARTERIAL

	Range	No. Samples	Mean Difference A* — ACB**	SD	SE	P
Finger						
O_2	0-100 mm Hg	20	–0.50 mm Hg	4.23	0.94	0.50
O_2	100-300 mm Hg	20	64 mm Hg	40.1	8.90	0.01
O_2	300-600 mm Hg	20	172 mm Hg	95.5	21.3	0.01
CO_2	0-50 mm Hg	20	0.0 mm Hg	3.01	0	0.50
CO_2	50-100 mm Hg	20	–0.8 mm Hg	1.55	0.35	0.05-0.02
pH	7.20-7.61	20	–0.007 pH	0.012	0.026	0.01-0.02
Earlobe						
O_2	0-100 mm Hg	20	–0.6 mm Hg	3.77	0.84	0.1-0.5
O_2	300-600 mm Hg	20	124 mm Hg	75.6	16.92	0.01
CO_2	0-60 mm Hg	20	–1.40 mm Hg	3.64	0.814	0.1-0.5
pH	7.34-7.52	20	–0.008 pH	0.017	0.0038	0.1-0.05

* Arterial
**Arterialized Capillary Blood

deeply and firmly into the selected site so that adequate blood flow is obtained.

Results

Reproducibility is demonstrated in Table I. The mean difference between two ACB samples taken at the same time was calculated along with the standard deviations and standard errors of these differences. A test was performed for each difference to test the null hypothesis that there was no difference between the means of each pair of blood samples. Since the P value in each comparison was greater than 0.05, the differences were not significant, and therefore the reproducibility was good. The mean difference was quite small in all instances.

Table II summarizes the accuracy of ACB samples compared with arterial blood samples drawn simultaneously. The arterial blood samples are considered to be the standard of reference.

Oxygen in the range 0-100 mm Hg is accurately analyzed with the ACB as shown by the small mean differences and P values, indicating that the accuracy is good and samples can be taken from the finger or the earlobe. The mean difference and P values indicate that in those instances where oxygen tensions are over 100 mm Hg, the accuracy is poor.

Table II demonstrates that when measuring pH and pCO_2, the ACB is accurate in the range of 0-100 mm Hg pCO_2, and in the range of 7.20 to 7.61 pH units.

Through experience, it was noted that anyone in shock, on a hypothermia unit, or with very calloused hands often has a poor peripheral blood flow, and therefore the ACB samples will not give reliable results.

Discussion

During the last ten years, there have been many publications dealing with the measurement of arterial blood gases and pH using arterialized capillary blood. In 1959, Gambino made comparisons of pH in human arterial and venous blood.[1]

In 1961 Gambino discussed the use of capillary blood for the simultaneous determination of arterial pH, oxygen content, pCO_2 and oxygen saturation.[2] He stated that the Lilienthal and Riley method[3] of blood collection was the only satisfactory one that yielded consistently reliable results. Unfortunately, this method requires the use of rather large samples of capillary blood, in the range of 0.6 to 1.8 ml.

The use of glass capillary tubes to collect arterialized capillary blood was described in 1961.[4]

Later, in 1968, the ACB was shown to give satisfactory values when patients were breathing room air. Unfortunately, they did not test the higher range for carbon dioxide, above 50 mm Hg.[5]

Another study stressed the superiority of the earlobe as a sampling site when compared to the finger tip.[6]

The present article emphasizes that ACB samples are reproducible and accurate for measuring pCO_2 and pH in all of the ranges that are encountered clinically in cardio-pulmonary disorders.

The arterialized capillary blood has limitations when one is measuring oxygen tensions. In the range of 0-100 mm Hg, the ACB is reproducible and accurate. Whenever oxygen tension is above 100 mm Hg, the ACB cannot be used. Therefore, if patients are breathing room air, the arterialized capillary blood should give satisfactory values for oxygen tension, but if a patient is breathing supplemental oxygen, the ACB cannot be expected to give accurate results for pO_2.

Summary

Direct arterial puncture is the preferred method of obtaining samples for blood gas analysis.

The arterialized capillary blood has a usefulness in selected situations. The reproducibility of arterialized capillary blood compared with arterial sampling is excellent. The accuracy is satisfactory for pH and pCO_2 in the usual clinical ranges. Capillary blood pO_2 measurements are accurate in the range 0-100 mm Hg. The latter fact limits the usefulness of arterialized capillary blood.

ACKNOWLEDGEMENTS

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* * *

WE GOOFED

The last paragraph of the Hippocratic Oath in MEDICAL OATHS: From Hippocrates to Present Day, *Delaware Medical Journal,* November 1972, was incomplete. It should read:

> "If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot."

WHAT IT IS LIKE TO BE A PATIENT

Chaplain Robert B. Reeves, Jr., S.T.M.

What is it like to be a patient? It is to be scared. Fear is the first, basic, all-pervasive reality in a patient's experience. It may be well hidden, so well hidden that the patient himself is aware only of a vague anxiety or trepidation, but nonetheless it is there. It has two parts: one is the fear that drives the patient to the hospital; the other is the fear of what may happen to him there.

The patient goes to the hospital because his well-being is endangered, if not already damaged. Every danger is potentially a threat to his life. Fear is his innate response, the emotional trigger to life-preserving action. Aroused by fear, he takes steps to save his life: he goes to the hospital.

This is true, no matter what the reason for admission. Even the most routine check-up, required, for example, by a corporation for its executives once a year, is premised on the possibility that "they might find something." Even elective surgery, where the aim is to correct deformity, restore function, or improve appearance, is premised on feelings of inadequacy, disadvantage, or anxiety strong enough to indicate a threat to well-being. Even childbirth, with all its elements of hope and rejoicing, carries a shadow of concern for the intactness of the baby and the welfare of the mother. However faintly, the patient smells danger, and however vaguely, he reacts in fear.

The other part of his fear is aroused by expectations of what may happen to him in the hospital. Will the doctors be able to find out what is wrong in time to save him? Will they discover something hidden that may be fatal? Will he awaken from anesthesia? Will the surgery leave him mutilated? Will the pain be more than he can bear? Will he ever be able to go back to work again? Will he, the person he now knows himself to be, remain intact?

The fear that sends a person to the hospital and the fear of what might happen to him there are, of course, in conflict. If the fear of what might happen to him is strong enough, it can keep him from going to the hospital; he may deny he is in danger until irreparable damage has been done. But in most people the fear aroused by danger to well-being is strong enough to outweigh the fear of hospitalization. Were it not so, no one would go to the hospital, and certainly no one would stay long after he got there. Fear is the driver. No one enters the hospital blithely.

A second reality in a patient's experience is the feelings evoked in the boundary-crossing process by which he is admitted from the outside world into the world of the hospital. Bewilderment, annoyance, and relief all figure here in varying degree, depending in large part on the difficulty of the crossing.

Few people get in without some difficulty. If they are not V.I.P.'s for whom the red carpet is spread, or emergency cases rushed in by ambulance, they are likely to have to wait for a bed, especially in the larger teaching hospitals. They may have to raise money for a deposit, or go through much red-tape to establish Medicare or other insurance status. They may have to go through an irksome and

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Chaplain Reeves is Chaplain, Presbyterian Hospital, New York City; Clinical Associate in Psychiatry and Religion, Union Theological Seminary; member of the Columbia University Faculty Seminar; past president of the College of Chaplains, The American Protestant Hospital Association.

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time-consuming admitting procedure with bored, brusque, or impersonally efficient staff. If surgery is in view, they may be required to sign the permission sheet then and there, and it often seems like signing life away.

Transformation Into a Patient

The third reality in the patient's experience is the process by which he is transformed from a person to a patient. It has three aspects.

First, he is divested of his outside identity and given a new hospital identity. His clothes are put away, and he dons pajamas and bathrobe, either hospital-issue or his own. A plastic band is secured around his wrist, stamped with the unit number by which all records pertaining to his case will be identified. Staff begin to refer to him by bed or room number or by diagnostic category ("the slipped disc in 306"). All the various people who come in to do things to him are not interested in who or what he was outside; they are concerned only with the tasks they must perform in relation to his case. He is very quickly made to feel depersonalized.

Secondly, his patterns of behavior and ways of relating to other people are radically altered. The moment before he was admitted, he could think of himself as in many ways a free agent; the moment after admission, he is suddenly caught up in an inexorable process which subjects him to regulation in almost every detail of his behavior. His eating, sleeping, exercise, and hygiene are all laid out on schedule. His dress, the hours when he may have visitors, his use of the telephone, smoking, drinking—all are subject to regulation. Initiative is denied him. He is at the mercy of strangers who tell him what to do. All his relationships now are governed by the fact that he is no longer a free agent, but a patient under treatment who is required to submit to regulations.

Thirdly, he loses privacy and control over the distance he keeps from other people. On a ward or in a semi-private room, where curtains at best provide only visual separation, he becomes aware at once that sounds carry, and little that he or his roommates say or do can be kept unknown to the others. In a private room, while he has some protection, he still has little control over who comes into his room. Anyone on staff may pop in at any time. Ward or private, he has no choice about telling the most personal details of his medical history to strangers. He is stuck, tapped, thumped; TPR's are taken, bloods drawn, Bed baths, urinals, bedpans, catheters, shaving, and injections are administered by people he may never have seen before, and to whom, outside the hospital, he would never permit the slightest intimacy.

So goes the initiation by which a person is made over into a patient. It is necessary. It is the only way that staff can do what they must do, and the only way that he can accept what they do without shock, shame, or outrage.

Making a Success of the Role as Patient

Once he has been initiated, the patient experiences a fourth reality: the need to make a success of his role as patient. He disassociates himself from the person he was before and from the world outside. The hospital is now his world, and he "settles in." He finds ways to compensate for many of the losses he sustained in the process of initiation. He begins to sort out the role and status of each of the staff people he encounters, to mark the uniform each wears, to feel out the chain of command, to discover who actually wields power and the best way to enlist his concern. He tests out how much he can use the telephone, how responsive the dietitian may be to requests for special food, how strictly the smoking regulations are enforced. He learns which staff people will do him favors, and which ones are indifferent. He starts to organize his time expectations. He finds ways of regaining a small degree of privacy. Where the realities of the hospital regimen do not yield to his testing, he settles for what is permitted. But wherever he detects a softness, he pushes to gain advantage. Remember, behind it all is fear, fear for his life. Every advantage gained is a token of life-preservation. He has somehow to recoup for what he feels he has lost.

So far, in describing what it is like to be a patient, I have dealt chiefly with circumstantial matters, what an observer looking on might see. But a great deal more is going on at a deeper level. Fear has brought the patient to the hospital, across the boundary, through the initiation, to the settling in. Now comes the stresses attendant upon diagnosis, surgery, or other treatment.

Coping with Stresses

His condition, the dis-ease, which brought him to the hospital, has already set up stress, and has reduced him to a lower, curtailed, or painful level of functioning. On top of that now come distressful diagnostic procedures, medications with disturbing side effects, the sapping, nauseating effects of radiotherapy, the frighteningly impersonal work-up and preparation for surgery. These all set up stresses which reduce him further, limiting his activity, interfering with normal habits, weakening his controls. He is reduced toward childhood or infancy, toward the deeply ingrained and nearly automatic behavior patterns which he learned earliest in life, which have stayed with him all through the years as a kind of substratum under the patterns of his later-achieved maturity.

It is not at all unusual in the hospital, to find a grown man in tears, or a gracious lady talking freely about her bowels. Patients, who when well seemed to be in command of every situation, are frequently found petulant or pouting. The most fastidious under normal circumstances often seem as patients to be the freest of embarrassment at bedpans, catheters, and urine bottles. The fiercely independent person sometimes becomes almost craven in his clinging; the blasé sometimes becomes a quaking lump of fear; the braggart sometimes subsides into naive compliance. All, in one way or another, seem to drop, as if it were a mask, their normal pattern of behavior, and reveal themselves as they were as children.

Given sufficient stress, some degree of reduction is inevitable. But reduction is never total, this side of death. The patient retains something of his adult self-awareness, his capacity to look at himself and compare what he is with what he feels he ought to be. And he is rarely very happy with what he sees. Indeed, he is often so unhappy about it that it produces further stress. He feels that he ought not let himself become helplessly dependent, ought not make childish demands, ought not be so frightened; he should have patience and fortitude and be considerate of other people.

So his feelings are very mixed. He knows he must depend on staff to take care of him, but reproaches himself for being dependent. He is often bewildered, as a child in a strange situation, but as an adult he is bewildered at his own bewilderment. He may cling to others as a child clings but angrily resent the weakness that makes him cling. This ambivalence, on top of all the other stresses, can seriously aggravate his sickness. In any case, it tends to put a raw edge on his behavior, making him touchy and unpredictable, difficult for staff to deal with.

The Patient's Dependency

Staff have their problems, too, and make a further contribution to the patient's stress. Their feelings are mixed. On the one hand, staff know that a sick person tends to become dependent, like a child. They not only know it, but they depend upon it and almost require it as a condition for their attention. Indeed, the initiation to which they subject the patient is largely designed to make the patient appropriately dependent. Staff also have an inner need to be needed — this is true of us all, but especially so in the "helping" professions. Staff's acceptance of the patient as a child is governed not only by considerations of patient-care, but by their own need to take a protecting, comforting, directing role.

On the other hand, to the degree that the patient's dependency places burdensome demands on staff, they are likely to feel put upon, trapped, captive to the patient's needs, and to resent the patient at the same time they try to help him. Staff feel the need to protect themselves, to maintain their freedom, to disown the dependent patient-child. Their feelings are ambivalent. To the stress of the patient's own conflict between the infant and adult within himself, is added now the stress of the staff's inner conflict between their need to be needed and their need to be free. When the needs of the patient become unduly burdensome, staff are likely to insist that he grow up and stop making infantile demands. But when the patient tries to act like an adult and becomes less compliant, staff find him difficult to manage and try to infantilize him again.

Relationships with Visitors

What it true of staff's feelings is also likely to be true of visitors, family or friends who come to see the patient. Their feelings are almost always a mixture of concern and resentment. They want to visit the patient and at the same time wish they did not have to do so. They are both sorry and annoyed that he is sick. The closer they are to the patient, by blood, marriage, or common interest, the more acute their feelings, both positive and negative.

The concern which brings the visitor to the hospital can have many roots. If it is rooted in affection, it will probably be shot through with fear for the patient, and fear also for what may happen to the family or business if the patient does not recover, or fear lest diagnosis disclose an ailment with a familial tendency, or fear of damage to a marriage or disruption of a style of life. Concern may also be rooted in guilt: guilt for having neglected the patient, for having made unreasonable demands upon him, for having failed to see that he was tired, despondent, or in pain, guilt for imagined wrongs against him, guilt for having sometimes wished him dead.

Feelings such as these are apt to be very painful to the visitor, and may give to his concern a peculiar quality of reproachful anger. Rarely is the anger expressed as such; it is usually unconscious. But it comes out disguised in many ways: in oblique reminders of trouble caused by the patient's absence from home or work, in impatient cheerfulness, in a refusal to let the patient complain, or cry, or be depressed, in telling the patient how much worse off someone else is. The message the patient gets is almost always, "You shouldn't be here." No matter how sweetly, jovially, or sympathetically it is put, it carries to him an undertone of anger and reproach. On top of the feelings he already has about his reduction under stress, and the feelings often conveyed to him by members of the staff, he sometimes finds visitors adding to his distress. He is glad to have them come, yet dreads their arrival. He is sorry to see them go, yet inexpressably relieved.

Breakdowns in Procedure

Still further stress sometimes comes with breakdowns in procedure, the kinds of things that do happen, in even the best-regulated hospitals. Lapses occur. A technician may draw blood from the wrong patient. Labels may fall off laboratory specimens and get reattached to the wrong test-tubes. A patient on a special diet may get a tray with the regular menu. Two patients with the same last name may get their drugs mixed up. A patient's signal light may go unheeded for an hour. Too many tests or x-rays or operations may be scheduled for a given day, and as a result a patient has to be "bumped." A doctor may forget to write an order, and his patient does not receive the pills he needs for pain. The possibilities are endless. It is no wonder things sometimes go wrong; the marvel is that things go right so much of the time.

But when things do go wrong and a patient's confidence is shaken, the frustration, rage, panic, or despair that builds up can be one of the most disturbing stresses in a patient's entire experience. When well, he could rationalize or excuse or find a way to deal with such lapses; but when reduced by sickness to weakness and dependency, any lapse or breakdown in procedure is likely to be utterly unnerving. If ever he reacts as an infant, it is then. And when staff try to explain to him, as if he were an adult, they only make matters worse.

Another source of stress, which figures in the patient's experience, will be the subject-matter of the presentation to follow: what happens to the patient's religion.

Part II of Chaplain Reeves' presentation will appear in the next issue of the *Journal.*

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Special Reports

CURRENT CONCEPTS REGARDING THE CLASSIFICATION AND PROPHYLAXIS OF HEPATITIS

The Division of Public Health receives many requests from physicians for guidelines in the prescription of gamma globulin to persons exposed to hepatitis.

The following article, originally appearing in the June 10, 1972 issue of *Morbidity and Mortality*, Volume 21, Number 23, is reprinted here, at the suggestion of Maynard H. Mires, M.D., Chief, Bureau of Disease Control, Division of Public Health, for the benefit of physicians.

IMMUNE SERUM GLOBULIN FOR PROTECTION AGAINST VIRAL HEPATITIS

The term "viral hepatitis" as commonly used applies to two diseases that are clinically quite similar but virologically, immunologically, and epidemiologically distinct. These diseases are hepatitis-A (formerly infectious hepatitis) and hepatitis-B (formerly serum hepatitis). Any other viral infection that affects the liver, producing an inflammatory response or "hepatitis," is not customarily included under the term viral hepatitis.

Immune serum globulin (ISG) is highly effective protection against the clinical manifestations of hepatitis-A but ineffective for hepatitis-B. Therefore, accurate diagnosis of the kind of viral hepatitis, insofar as is possible with methods presently available, is crucial to the effective use of ISG. Clinically, it is extremely difficult to distinguish between individual cases of hepatitis-A and hepatitis-B, but discrimination between these diseases often is possible, based on careful evaluation of epidemiologic evidence and blood tests for hepatitis-B.

Viral hepatitis is often acquired as a result of a particular kind of exposure, and terms such as "transfusion-associated," "hemodialysis-associated," "chimpanzee-associated," and "syringe-" or "needle-associated" help characterize the mode of transmission.

Hepatitis-A

Hepatitis-A is thought to be caused by a virus transmitted principally by the fecal-oral route under conditions of poor sanitation and close contact with infected persons. Characteristically, the illness produced is of abrupt onset with fever, malaise, anorexia, nausea, abdominal discomfort, and jaundice. Morbidity is variable and mortality quite low (less than 1 percent). The usual incubation period of hepatitis-A is 15-50 days (average 25-30). Stools from patients with hepatitis-A have been shown to be infective as long as two to three weeks before and two weeks after the onset of jaundice. Blood is infective at least two weeks before but less than one week after the appearance of jaundice, so parenteral transmission of hepatitis-A is also possible.

Hepatitis-B

Hepatitis-B is thought to be caused by a virus, distinctive from that associated with hepatitis-A, transmitted principally by parenteral routes. Insidious onset of illness, anorexia, malaise, nausea, vomiting, abdominal discomfort, and jaundice are characteristic. Morbidity is variable; mortality exceeds that of hepatitis-A. Exposure is usually through blood transfusion or contaminated needles. The incubation period is characteristically long, usually two to six months; however, some hepatitis-B cases with incubation periods as short as one to two months have been observed. Non-parenteral transmission of hepatitis-B also occurs and probably contributes to the occupational hazard for those who work in blood banks, or renal dialysis units, or are otherwise in direct contact with infective blood. The exact mechanism and frequency of these non-parenteral transmissions are under intensive study.

Virus-like particles, termed the hepatitis-B antigen (HBAg), have been detected in the serum of many patients with hepatitis-B. These particles (which were originally tagged "Australia antigen" and then "hepatitis-associted antigen") appear to persist from about four weeks before onset of jaundice to four to five weeks or more after onset. In a small proportion of patients, an HBAg-carrier state develops. HBAg is found in a large proportion of patients with transfusion-associated hepatitis and with hepatitis associated with parenteral drug abuse. It is detectable in hepatitis patients who cannot recall any possible parenteral exposure and in some completely asymptomatic persons.

Blood with HBAg is very likely to be infective. Blood banks use HBAg detection in screening program aimed at eliminating hepatitis-B transmission through blood transfusion. Antibody to HBAg (anti-HBAg or HBAb) in the serum of hepatitis-B patients during convalescence has been demonstrated. Its role in protection is under investigation.

Hepatitis Surveillance

Viral hepatitis has been a nationally reportable disease since 1952. Since 1966 the two kinds of hepatitis have been listed separately. The annual total number of viral hepatitis cases has varied somewhat cyclically between 14,922 (1957) and 72,651 (1961); there were peaks in 1954 and 1961 and a gradual increase in incidence since the most recent nadir in 1966 (34,356 cases). A total of 69,636 viral hepatitis cases were reported in 1971; 8,879 were presumed on epidemiologic grounds to be hepatitis-B. The other 60,757 were hepatitis-A and possiby other viral diseases or hepatitis-B cases that were epidemiologically unconfirmed.

In the last five years, several important changes in epidemiologic trends were observed in the characteristics of reported cases: hepatitis used to occur predominantly in winter and spring, but the seasonal variation has diminished remarkably; the age distribution has shifted from a peak in persons aged 5-14 to those 15-24 years; an equal proportion of cases between the sexes has changed to a 2:1 male preponderance among patients 15-24 years; and the general rural to urban trend has been notable. During the same five-year period, the rate of increase in reported cases was greater for hepatitis-B than hepatitis-A. These changes have paralleled the recognized rise in illicit use of parenteral drugs.

Immune Serum Globulin

Immune serum globulin (ISG) is a sterile solution containing antibody derived from human blood for intramuscular use. It is 16.5 percent protein obtained by cold alcohol fractionation of large pools of blood plasma. It contains specified amounts of antibody against diphtheria, measles, and one type of poliovirus. Neither hepatitis-A nor hepatitis-B has been transmitted by ISG.

ISG and Hepatitis-A

Numerous field studies during the past two decades have documented the protection against hepatitis-A conferred by ISG administered before exposure or during the incubation period. Its relative effectiveness depends on timing and dose. When administered before or within one to two weeks after exposure to hepatitis-A in the appropriate dose, it prevents illness in 80-90 percent of those exposed. However, because ISG may not suppress inapparent infection, long-lasting, natural immunity may result.

The decision to give ISG is based on assessing the possible hepatitis exposure. If the exposure could have resulted in infection, ISG should be given.

ISG should be given as soon as possible after a known exposure. Its prophylactic value is greatest when given early in the incubation period and decreases with time after exposure. The use of ISG more than six weeks after exposure or after onset of clinical illness in a contact is not indicated.

Dosage

The dosage patterns of ISG in common use were derived primarily from field and clinical observations. Under most conditions of exposure, protection is afforded by intramuscular injection of 0.01 ml of ISG per pound of body weight (approximately 0.02 ml/kg) (Table I).

Specific Recommendations

Household Contacts: Close personal contact, as among permanent and even temporary household residents, is important in the spread of hepatitis-A. Secondary attack rates are particularly high for children and teenagers. Rates are somewhat lower for adults, but illness tends to be more severe. ISG is recommended for all household contacts who have not already had hepatitis-A.

TABLE I

Guidelines for ISG Prophylaxis Against Hepatitis-A

Person's Weight (Lb.)	ISG Dose (ml)*
<50	0.5
50-100	1.0
>100	2.0

*Within limits, larger doses of ISG provide longer-lasting but not necessarily more protection. More ISG is, therefore, prescribed under certain circumstances. (See Institutional Contacts and Travelers to Foreign Countries)

School Contacts: Although the highest incidence of hepatitis is among school-age children, contact at school is usually not an important means of transmitting this disease. Routine administration of ISG is not indicated for pupil or teacher contacts of a patient. However, when epidemiologic study has clearly shown that a school- or classroom-centered outbreak exists, it is reasonable to administer ISG to persons at risk.

Institutional Contacts: In contrast to schools, the conditions in instituions, such as prisons and faciliies for the mentally retarded, favor transmission of hepatitis-A. Sporadic cases as well as epidemics in such institutions have been reported frequently. ISG administered to patient and staff contacts of hepatitis-A patients in the doses shown in Table I can effecively limit the spread of disease.

Where hepatitis-A is endemic, particularly in large institutions with high rates of admission and discharge, all who live and work there (residents and staff personnel) may be subject to continuing exposure. Under these circumstances, ISG has not resulted in eradication of hepatitis, but it has provided temporary protection against hepatitis-A when administered in doses of 0.02-0.05 ml/lb at the time of admission or employment. Re-administration of ISG in the same dose every six months may be necessary as long as the risk persists.

Hepatitis-B, which is not affected by ISG, may also be endemic in such institutions; therefore, the type of hepatitis should be identified by epidemiologic and serologic methods before considering routine, general use of ISG (see ISG and Hepatitis-B).

Hospital Contacts: Routine prophylactic administration of ISG to hospital personnel is not indicated. Emphasis should be placed on sound hygienic practices. Intensive, continuing education programs pointing out the risks of exposure to hepatitis-A and the recommended precautions should be directed toward hospital personnel who have close contact with patients or infective materials.

Hemodialysis: Most of the hepatitis affecting patients and the staff of renal hemodialysis units appears to be hepatitis-B and therefore not preventable by ISG (see ISG and Hepatitis-B).

Needle Exposure: For a person accidentally inoculated with blood or serum from a hepatitis patient, ISG prophylaxis should be used only if the inoculum is suspected of containing hepatitis-A. Then, ISG should be given in the dose specified in Table 1.

Office and Factory Contacts: Routine administration of ISG is not indicated for persons exposed in the usual office or factory situation to a fellow worker with hepatitis.

Common-Source Exposure: When food, water, or other such vehicle is clearly identified as a common source of infection for multiple hepatitis cases, administration of ISG should be considered for others exposed.

Exposure to Non-Human Primates: Sporadic cases and outbreaks of hepatitis have occurred among persons in close contact with recently imported non-human primates, primarily chimpanzees. Because of the similarity between chimpanzee-associated hepatitis and hepatitis-A, prophylactic ISG has been used with apparent success in doses of 0.02 ml/lb

(0.05 ml/kg) administered every four months to those in close contact with newly imported animals. Emphasis should also be placed on other measures, such as scrupulous hygienic practices, use of protective clothing, and limitation of human contact with the animals.

Travelers to Foreign Countries: The risk of hepatitis-A for United States residents traveling abroad appears to be small; it varies with living conditions, the prevalence of hepatitis in the areas visited, and particularly the length of stay.

Travelers may be at no greater risk than in the United States when their travel involves ordinary tourist routes and lasts less than three months; ISG is not routinely recommended for them. However, travelers to tropical areas and developing countries who bypass ordinary tourist routes may be at greater risk of acquiring hepatitis-A. If ISG is administered, the dosage schedule in Table I should apply.

Travelers planning to stay (three or more months) in tropical areas or developing countries where hepatitis-A is common and where they may be exposed to infected persons and contaminated food and water are at greater risk of acquiring hepatitis. A single dose of ISG as shown in Table II is recommended for them. (Data are inadequate to specify precise boundaries.)

TABLE II

GUIDELINES FOR US TRAVELERS PLANNING TO STAY THREE OR MORE MONTHS IN TROPICAL AREAS OR DEVELOPING COUNTRIES

Person's Weight	ISG Dose (ml)
<50	1.0
50-100	2.5
>100	5.0

For persons residing abroad in tropical areas or developing countries, the risk of hepatitis appears to persist. Experience has shown that regular administration of ISG offers at least partial protection against hepatitis. It is recommended that prophylactic ISG be repeated every four to six months at doses indicated in Table II.*

Pregnancy: Pregnancy is not a contraindication to using ISG as recommended.

Reactions

ISG should *not* be administered intravenously because of the possibility of severe hypersensitivity reactions.

Intramuscular administration of ISG rarely causes adverse reactions. Discomfort may occur at the site of injection, especially with larger volumes.

A few instances of hypersensitivity have been reported, but in view of the very large number of persons who have received ISG, the risk is exceedingly small. Antibody against gamma globulin may appear following administration of ISG although its significance is unknown. When ISG is indicated for the prophylaxis of hepatitis-A, this theoretical consideration should not preclude its administration.

ISG and Hepatitis-B

Numerous well-constructed studies have attempted to document the protective effect of standard immune serum globulin against hepatitis-B. Evidence indicates that there is no protective effect. Therefore, ISG should not be used for protection against so-called transfusion-associated hepatitis. It should not be administered routinely to patients and staff members of hemodialysis units, to other persons exposed to hepatitis-B, or to hepatitis-B carriers. The lack of effect of ISG against hepatitis-B is presumably related to insufficient titer or complete absence of specific antibody against hepatitis-B in most lots of commercial ISG. Whether or not administration of hyperimmune globulin containing large amounts of HBAb will prove effective in modifying hepatitis-B has yet to be determined.

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*Some agencies have used up to 0.05 ml/lb each four to six months rather than the 5 ml for adults recommended here.

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Editorials

LEAD POISONING IN CHILDREN: A MEDICAL RESPONSIBILITY?

The complex nature of solving the problem of Lead Poisoning in Children was revealed at the recent Eastern Regional Conference on Lead Poisoning held at the Academy of Medicine in Wilmington. The many disciplines involved in resolution of this problem were well represented, namely, Medicine, including private physicians and Public Health representatives; the Law, both legislators and lawyers; Industry, Educators, primarily those concerned with mass media; and the Community, those affected by the disease, as parents and taxpayers. The conference stimulated both interest and action on the part of the participants.

An excellent paper, presented by Dr. Barbara Rose at this Conference, is published in this *Journal*, regarding the Wilmington Experience. The three studies examined in this article give us a perspective of the problem in our community. The part that Medicine plays in this problem is clearly delineated. All primary physicians should be well aware of the signs and symptoms of lead poisoning and maintain a high index of suspicion, lest a child with minimal symptoms go unrecognized. The tools for screening and diagnosis are now available. We should be the vanguard for early recognition and diagnosis of this disease, which in its early stages is reversible. If left unrecognized, a case of lead poisoning could well result in serious neurological deficit, even permanent institutionalization or death, as was the case in four of the patients cited in this article.

But medical responsibility goes beyond the recognition of lead poisoning. A study is being planned, through a federal grant to the Division of Public Health, for screening and diagnosis of children under the age of six years in three high-risk areas of Wilmington. Some of us will be called upon to follow-up on some of these children; the rest will be referred to the Wilmington Medical Center Pediatric Clinic. Our responsibility includes not only proper medical management of each case but also education of each family regarding the cause and potential hazards of this disease. Public Health nurses will be available to assist with home visits and reinforcement of this aspect of the program.

Dr. Rose's article
appears on page 1.

What more can we do as physicians? Beyond diagnosis, treatment, and education of individual families, we should concern ourselves with the preventive aspects also. Lead poisoning is a preventable disease, the cause is well known, and funds are becoming available to hit the problem at its source. It is not enough for us to close the barn door after the horse is out. We must cooperate fully with those concerned with educating the public, by serving as speakers to local groups, or on radio and TV, when asked. We must cooperate with legislators in developing legislation at the city and state levels to prevent further use of lead paint in homes. We should make known our concern, as individuals and as a Medical Society, to enable those involved with housing and relocation of families to receive more adequate financial aid. Only by having all those concerned about the problem of lead poisoning in children pull together can we hope to make this dread disease a "matter of historical interest." We are still a long way from achieving that goal.

M.J.M.

MATERNAL HEALTH CARE IN DELAWARE:
A Population in a Population

One of the longest titles ever conceived for a study must be "The National Study of Maternity Care Survey of Obstetric Practice and Associated Services in Hospitals in the United States." With prodigious ambition, equal to the length of the title of the Study, the American College of Obstetricians and Gynecologists started the whole thing four years ago.

Using a questionnaire survey technique the Committee on Maternal Health of the ACOG made inquiry of every hospital rendering maternity care in the United States regarding care delivered in the year 1967.

The data base derived came from 73% of the hospitals queried. Involved are 3,883 hospitals, 2,795,601 births, 876 maternal deaths, and 39,459 stillbirths (14.3 per 1,000 live births). This massive study was finally completed in 1970 and published by the ACOG last year.

The mass of information in the study provides a yardstick for evaluation of maternity care delivered in hospitals of all sizes, by all types of professional personnel (obstetricians, generalists, and doctors in training), and compares physical facilities, nursing services in labor and delivery areas, analgesia and anesthesia patterns of usage, laboratory facilities, records, care of the newborn, and pregnancy outcome.

One category in the study, Pregnancy Outcome, presents a recital of readily measurable national statistics. These include maternal mortality (32.3 per 100,000 live births), stillbirths (14.3 per 1,000 live births), neonatal death rates (14.3 per 1,000 live births), stillborn autopsy rates (36 per cent), neonatal autopsy rates (50 per cent), and Caesarean section (4.8 per cent, 2.6 primary and 2.2 secondary).

In general, how did Delaware fare in comparison with other regions and the U.S. as a whole? For good or for ill, in most areas, we were just average. ACOG District III (Pennsylvania, New Jersey and Delaware) was like Delaware (just about average in all categories).

Why did not Delaware make a better showing? The state, and New Castle County in particular, are unusually well endowed with superior quality medical facilities. An abundance of highly qualified and skilled professionals is reasonably well distributed throughout the state. Maternity and pediatric care delivered in the private sector is of demonstrably high quality. There is no apparent shortage of beds, supporting facilities, or personnel anywhere in the state. Yet, a significant segment of our state population is not deriving maximum benefit from the care that is available.

There are very real problems with delivering appropriate maternal services to a large segment of the urban population in Wilmington proper and to much of the rural community in the lower two counties. These urban and rural populations have apparent maternal, stillborn, and neonatal mortality rates more than 50% higher than those in the populations of suburban New Castle County and the downstate urban communities. Neither size of hospital, type of physician rendering service, nor any other single factor seems to mean as much as simple geographics.

Delaware, with its frustrating problem of delivering available, quality, maternal care to a population demonstrably in need, is perhaps a microcosm of the entire country. Large masses of data as compiled in the Study tend to obscure such "a population within the population," Delaware being a classic example in its diversity.

The Study led to certain recommendations perhaps applicable to our situation in Delaware. The proposals include consolidation into fewer, larger maternity facilities to provide better facilities and staffing patterns in labor and delivery units, more widespread use of postpartum recovery units, regional neonatal intensive care facilities, increased application of existing fetal monitoring techniques, and greater emphasis on neonatalogy and cytogenetics. All of these should improve the quality of care. However, the problem of delivery of maternal care where most needed remains an obscure challenge.

W.D.J.

Delaware Academy of Family Physicians

PSYCHIATRIC SEMINARS

A Seminar Workshop series of ten sessions for non-psychiatric physicians to improve skills of diagnosis, understanding, and management of psychiatric problems will be sponsored by Jefferson Medical College, the Wilmington Medical Center, Inc., and the Delaware Academy of Family Physicians, February 14 through April 18, 1973. The Seminars will be held from 1 to 3 p.m. Wednesdays in the 3rd North Conference Room of the Wilmington General Division, Wilmington Medical Center, Chestnut and Broom Streets, Wilmington. The program is acceptable for 20 prescribed hours by the AAFP. Call Mrs. Anne E. Shane for registration information at 658-7596.

PROGRAM

1 P.M. TO 3 P.M.

Moderator - David Platt, M.D.

February 14	Audio-Visual Media — Its Value in Psychotherapy Floyd S. Cornelison, M.D.
February 21	Prescribing Anti-Depressants — Which Patient Gets Which Drug and Why William A. Rutter, M.D.
February 28	What Value Are Group Therapy, Encounter Groups, Sensitivity Groups, Etc. Nicholas P. Bash, M.D.
March 7	The Hyperkinetic Child — What Can Be Done to Control and Direct Him Gabriel D'Amato, M.D.
March 14	The Normal vs. the Abnormal in Young Adults V. Terrell Davis, M.D.
March 21	Nightmares and Dreams — Their Meaning and Interpretation Abraham A. Freedman, M.D.
March 28	The Post-Partum Depression — Prevention and Treatment Jerome Kay, M.D.
April 4	What Happened to the Patriarchal Family? Albert M. Biele, M.D.
April 11	Therapeutic Use of Hypnosis in Stressful Situations Alessandro Rizzo, M.D.
April 18	Suicide — Danger Signals H. George DeCherney, M.D.

President's Page

PHASE III

The following is the context of a letter from John R. Kernodle, M.D., Chairman of the AMA Board of Trustees, to President Nixon. In his letter Dr. Kernodle expresses the medical profession's dismay regarding the discriminatory treatment of the profession under Phase III of the Economic Stabilization Program and requests relief from those provisions.

"Dear Mr. President:

"The American Medical Association has applauded your Administration's efforts to stabilize prices and wages for the economy. The Association has supported the overall objectives of the Economic Stabilization Program and actively cooperated with the Cost of Living Council through the Health Services Industry Committee in the application of price controls on physicians' fees.

"A look at the physician component of the Consumer Price Index gives an example of the effect that "voluntary compliance" can have in curbing inflation. As a result of this Association's activities, physicians' fees rose only 1.7% under Phase II. This constitutes one-third the rate of increases prior to the Economic Stabilization Program. In this respect, we have surpassed the original expectations of the Cost of Living Council, which called for halving the inflationary rates prior to Phase I.

"In view of our demonstrated success during the past year, you can imagine our dismay at the announcement of plans for Phase III. Although most of the economy is now expected to "voluntarily" adhere to the general guidelines of the Cost of Living Council, the medical profession has been placed under mandatory regulations. Indeed, the medical profession has once again been singled out under special controls. The physicians of America will not accept such discriminatory treatment. This profession must not become the victim of efforts to curb inflation in the more expensive components of the health care industry, which due to their internal financial structures have been unable to decelerate increases in their prices.

"The record of the past year clearly demonstrates that physicians are able to effectively control their fees through voluntary action. The record of the past year is equally clear that physicians' fees have not been an inflationary factor in health care costs. We, therefore, request that the medical profession be exempt from special regulations under Phase III, and respectfully request an early opportunity to visit with you on this and other matters of critical importance to the nation and the medical profession.

Respectfully,

John R. Kernodle, M.D."

I feel sure that all physicians in Delaware agree that the discriminatory treatment should be terminated and join with me in encouraging the AMA to seek exemption from the special regulations under Phase III.

Joseph R. Elliott

PROCEEDINGS OF THE HOUSE OF DELEGATES, 1972

MEDICAL SOCIETY OF DELAWARE

RESOLUTIONS

The following Resolutions were considered at the Annual Meeting of the House of Delegates of the Medical Society of Delaware.

Resolution No. 1

Whereas, It has been found that one of the most serious and tragic problems facing the public health and welfare is the death of dozens of persons in Delaware every year from chronic renal disease; and

Whereas, The present state of the medical art and technology could return these persons to socially productive life; and

Whereas, Advances and discoveries in the treatment of patients suffering from chronic renal disease now allow, no mere survival, but rehabilitation of these patients to their normal occupations and activities; and

Whereas, Presently, these patients are dying for lack of personal financial resources to pay for the expensive equipment and care which they need; therefore be it

Resolved, That it is essential that the physicians of Delaware be knowledgeable of this problem and the existence of the State Chronic Kidney Disease Committee and start treatment at facilities already available.

Joseph F. Hughes, M.D.

Report of the Reference Committee

The Committee recommends adoption of this resolution with a change in the name of "the State Chronic Kidney Disease Committee" to the more correct "the Renal Disease Advisory Committee." The resolution was adopted with the recommendation of the Reference Committee.

Resolution No. 2

Whereas, In the recent investigation of the Possum Park Medical Center the physicians involved did their work promptly and submitted their reports promptly; and

Whereas, The physicians involved did so in a manner conducive to good public relations protecting the rights of the patient and the rights of the doctor; and

Whereas, The Medical Council took six months to review the report and render a decision; and

Whereas, Such action of the Medical Council has suggested to the public wrongdoings, manipulation on the part of physicians, an air of secrecy supported by physicians, and a refusal to let the public know the truth; therefore be it

Resolved, That the Medical Society of Delaware go on record to support a change in the Medical Practice Act that would require the Medical Council to render a decision within sixty days after they have received the completed report from the Censor Committee; and be it further

Resolved, That this report be made a matter of public record and that the Medical Society of Delaware receive the ruling of the Medical Council.

William J. Vandervort, M.D.

Report of the Reference Committee

The Committee recommends that this resolution be rejected. The resolution was rejected.

Resolution No. 3

Whereas, Mental illness disables at least one in ten people; and

Whereas, Mental illness in its more serious forms requires specialized medical management to minimize or prevent serious physical, emotional, or economic incapacity; therefore be it

Resolved, That coverage for psychiatric illness be included in all comprehensive prepaid medical care programs.

Delaware Psychiatric Society

Report of the Reference Committee

The Committee recommends the adoption of this resolution. The resolution was referred by the House to the Medical Services Insurance Committee for further evaluation and recommendation.

Resolution No. 4

Whereas, Mental illness disables at least one in ten people; and

Whereas, In its more serious forms mental illness requires specialized medical management to minimize or prevent serious physical, emotional, or economic incapacity; therefore be it

Resolved, That psychiatric representation be included on the planning committees for all major health care programs in the State of Delaware.

Delaware Psychiatric Society

Report of the Reference Committee

The Committee recommends adoption of this resolution. The resolution was rejected by the House of Delegates.

Resolution No. 5

Whereas, Before the Delaware Adolescent Program, Inc. began their services to pregnant school-age parents in 1969, most pregnant school girls were either forced out of school or voluntarily dropped out of school; and

Whereas, Most of the teen-age pregnant mothers who dropped out of school ended up receiving welfare support for themselves and their infants; and

Whereas, The Delaware Adolescent Program, Inc. has enabled 97% of the pregnant school girls enrolled in the program to remain in school and/or complete high school; and

Whereas, The Delaware Adolescent Program, Inc. provides education and medical care for the mothers and infants, Day Care and Social Services for the young mothers, fathers and their families; and

Whereas, The rate of prematurity has been reduced by 50% for infants of mothers enrolled in the medical program of DAPI; therefore be it

Resolved, That the Medical Society of Delaware endorses the Delaware Adolescent Program, Inc. as a worthwhile program and strongly recommends public support of this program.

MARJORIE J. MCKUSICK, M.D.

Report of the Reference Committee

The Committee recommends adoption of this resolution. The resolution was adopted. The House of Delegates approved commendation of Marjorie J. McKusick, M.D. for a statewide job very well done and nationally recognized.

Resolution No. 6

Whereas, The use of credit cards is now one of the accepted and used ways of payment; and

Whereas, The American Medical Association leaves it up to the local Society to permit use of credit cards; and

Whereas, The Legal Counsel of the New Castle County Medical Society expressed his opinion that use of credit cards is not contrary to medical ethics set up by the American Medical Association, provided that the patient has the choice to use a credit card and further provided that no charge be levied by the physician on the patient for use of the credit card; therefore be it

Resolved, That the members may accept credit cards as payment for their professional services; and be it further

Resolved, That the physician will be the one who will decide whether to accept a credit card payment.

NEW CASTLE COUNTY MEDICAL SOCIETY

Report of the Reference Committee

The Committee recommends adoption of this resolution. The resolution was rejected.

Resolution No. 7

Whereas, The Board of Directors of the New Castle County Medical Society recognize the value and need of physicians in the private practice of medicine to serve as members of various committees, boards, councils, etc., concerned with health problems; and

Whereas, In most of the cases it is customary that there is no compensation for the time spent while attending meetings of these committees; and

Whereas, In order to attend meetings scheduled during the usual office hours of private practice physicians, he or she must take time away from his or her practice, which could result in financial loss; and

Whereas, Such inconvenience is not experienced by salaried physicians since their salary continues; therefore be it

Resolved, That the Board of Directors requests that wherever possible and practicable, the meetings be scheduled in the evening hours, noontime, or during weekends.

NEW CASTLE COUNTY MEDICAL SOCIETY

Report of the Reference Committee

The Committee recommends adoption of this resolution. After deletion of the word "noontime" in the Resolved, the resolution was adopted.

Resolution No. 8

Whereas, The work and involvement of the Medical Services Insurance Committee and the Medical Review Committee, a subcommittee of the Medical Services Insurance Committee, are so vital and important to each member of the Medical Society of Delaware; and

Whereas, The members of these committees should be elected by the House of Delegates, rather than appointed by the President; and

Whereas, As standing committees these two committees, which are so important to the socio-economic welfare of physicians, will have increased stature in the eyes of other parties; therefore be it

Resolved, That the Medical Services Insurance Committee be declared a Standing Committee of the Medical Society of Delaware and the Medical Review Committee a Standing Subcommittee of the Medical Services Insurance Committee of the Medical Society of Delaware.

BOARD OF TRUSTEES, MEDICAL SOCIETY OF DELAWARE

Report of the Reference Committee

The Committee recommends adoption of this resolution. The Resolution was adopted.

Resolution No. 9

Resolved by the House of Delegates of the Medical Society of Delaware:

1. That Article XII, Section 1, Standing Committees be amended by adding "(7) Committee on Medical Services Insurance. The Medical Review Committee will be a standing subcommittee of the

Committee on Medical Services Insurance."

2. That Article XII Standing Committees be amended by adding a new Section 12.

"Medical Services Insurance. The Committee on Medical Services Insurance consists of not less than five elected members, one of whom shall be the Chairman of the Medical Review Committee. The Committee shall concern itself primarily with formulating contractual arrangements between physicians and *all* providers of medical insurance. Its duties shall include but not be limited to review and approval of any new medical plan to be offered to subscribers prior to implementation; investigation of any proposals for regulation of fees for health services and recommendation to the board of trustees of mechanisms for dealing with such proposals: investigation of and recommedation on any insurance carrier proposals for making claims processing more efficient; receipt of minutes of the medical review committee; and consideration of such other things which may properly be referred to it by the Board of Trustees.

"The Committee on Medical Services Insurance is the parent committee of the Medical Review Committee, which concerns itself with individual fee problems which arise between patients, physicians, and insurance carriers."

3. That Article XII Standing Committees be amended by a new Section 13. "*Medical Review.* The Medical Review Committee consists of not less than five elected members. The chairman shall be a member of the Committee on Medical Services Insurance. The Medical Review Committee shall upon request review and recommend resolution of differences in regard to a proper professional fee for services rendered.

The Medical Review Committee shall be a stand-subcommittee of the Committee on Medical Services Insurance."

BOARD OF TRUSTEES, MEDICAL SOCIETY OF DELAWARE

Report of the Reference Committee

The Committee recommends adoption of this resolution. On amendment the House changed Section 12 to read "The Committee on Medical Services Insurance consists of not less than *eighteen* elected members, *appropriately proportioned among the counties,* one of whom shall be the Chairman of the Medical Review Committee. The resolution was then adopted.

Resolution No. 10

Whereas, The 1971 House of Delegates passed a resolution that a committee be appointed for the purpose of studying restructuring the Society; and

Whereas, The committee has not yet completed its difficult and complex task; and

Whereas, The need for such restructuring is as strong today, if not stronger; therefore be it

Resolved, That the work of the committee be continued until a successful conclusion of its assignment has been attained.

BOARD OF TRUSTEES, MEDICAL SOCIETY OF DELAWARE

Report of the Reference Committee

The Committee recommends adoption of this resolution. The resolution was adopted.

Resolution No. 11

Whereas, The Medical Society of Delaware feels a deep obligation to the citizens of the State of Delaware as well as to its membership; and

Whereas, The Society has consistently and persistently promoted programs to insure physician competence; and

Whereas, The Society feels a voluntary, nonthreatening form of self-improvement through Continuing Education within the medical profession is the ideal way in which to achieve its goals; and

Whereas, Positive steps must be taken to curtail the spiralling upward thrust of liability costs; therefore be it

Resolved, That the report of the Continuing Education Committee be adopted as policy of the Society.

BOARD OF TRUSTEES, MEDICAL SOCIETY OF DELAWARE

Report of the Reference Committee

The Committee recommends adoption of this resolution. The House amended the resolution by adding "Resolved, that the certification program of the American Medical Association or of any recognized national specialty organization be accepted in lieu of the state documentation and certification." The resolution was then adopted.

Resolution No. 12

Whereas, Sophisticated hearing testing facilities exist in Wilmington, Dover, and Georgetown for auditory examination of children; and

Whereas, No facility is now available to adults in our state except that at the Delaware Division; therefore be it

Resolved, That our State Society urge our Secretary of Department of Health and Social Services to provide the additional requirements necessary to make all these facilities available to adults in our state.

LLOYD B. HARRISON, JR., M.D.

Report of the Reference Committee

This resolution was not submitted prior to the House of Delegates meeting and therefore was not considered by a reference committee. The resolution was adopted.

The complete report of the Proceedings of the House of Delegates is on file in the Medical Society office and is available to members for reference.

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(Editor's Note: The Health Care Delivery Committee will appear in a later issue of the *Journal.*)

American Cancer Society, Delaware Division, Inc. — Oscar N. Stern, M.D., Liaison
Community Council on Emergency Services — L. Mario Garcia, M.D., Alfonso P. Ciarlo, M.D., and Albert Dworkin, M.D., Representatives
Delaware Academy of Medicine — Norman L. Cannon, M.D., Representative
Delaware Association of Medical Assistants — George P. Liarakos, M.D., Liaison
Delaware Diabetes Association — R. Walter Powell, M.D., Liaison
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Delaware Interagency Council on Smoking and Health — Patrick F. Ashley, M.D., Liaison
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Medical Advisory Committee, Division of Social Services, State of Delaware — Rhoslyn J. Bishoff, M.D. and William F. Renzulli, M.D., Representatives

In Brief

Speakers On "Ask The Doctor"

Speakers for February, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: February 6, Ronald Fortner, D.D.S, *Plaque Free in '73;* February 13, Marvin V. Andersen, M.D., *Family Centered Obstetrics;* February 20, Calvin B. Hearne, M.D., *Comments on the Effects of TV and Movies on Children's Health;* February 27, Dean G. MacEwen, M.D., *Scoliosis.*

In The News

Henri F. Wendel, M.D., New Castle, has been reappointed to the Council on Environmental, Occupational, and Public Health by the Board of Trustees of the AMA.

Harold S. Rafal, M.D., and *David Platt,* M.D., have been reappointed by Governor Peterson to three-year terms on the Delaware Comprehensive Health Planning Council.

William D. Shellenberger, M.D., has been appointed to a one-year term on the Environmental and Public Health Commission of the American Academy of Family Physicians.

New Officers of the Delaware Section of the American College of Obstetricians and Gynecologists are: *George H. H. Garrison,* M.D., Wilmington, Chairman, and *James B. McClements,* M.D., Dover, Vice Chairman. They were elected to three-year terms.

Lawrence Morris, Jr., former Executive Secretary of the Medical Society of Delaware and current vice president of Planning and Programming for the National Association of Blue Shield Plans, spoke on communication between Blue Shield Plans, spoke on communication between Blue Shield Plans and individual policy holders at a "Distinguished Guest Breakfast" during the American Society of Internal Medicine's Interim Meeting in Las Vegas, September 28-30, 1972.

Recently elected officers of the New Castle County Medical Society are: President, *Harold S. Rafal,* M.D.; President-elect, *Henri F. Wendel,* M.D.; Vice President, *Marjorie J. McKusick,* M.D.; Treasurer, *R. Walter Powell,* M.D.; Secretary, *Marvin H. Dorph,* M.D.; Board of Directors, *Rublee C. Soule,* M.D.; Board of Censors, *Charles S. Riegel,* M.D.; Board of Trustees, *Donald C. Cameron,* M.D., and *David A. Levitsky,* M.D.

U of D Offers Medical English Course

A course designed to provide instruction in English for the foreign-born practicing doctor, nurse, medical student, and other persons with a professional interest in the medical field, will be offered this spring by the University of Delaware. The course, "English as a Second Language for persons in the Medical Professions," will place emphasis upon improving the comprehension of written and rapidly spoken English within the context of medical vocabulary and phrasing.

The course will be conducted for 14 weeks beginning February 8 at the Alexis I. duPont Senior High School in Greenville from 7 to 10 p.m. Registration fee is $54. Interested persons should contact Jacob Haber at the Division of Continuing Education, John Clayton Hall, Newark, 738-2741.

CLINICAL NOTICES AND MEETINGS

Postgraduate Courses

The American College of Physicians is sponsoring 7 postgraduate courses for February and March. Feb. 26-March 2, *Clinical Gastroenterology,* University of Michigan Medical School, Ann Arbor; March 5-8, *Problems of International Health,* LeBaron Hotel, San Diego, California; March 5-8, *Modern Neurological Diagnosis and Therapy,* Eden Roc Hotel, Miami Beach; March 12-14, *Infectious Diseases,* University of Maryland School of Medicine, Baltimore; March 14-16, *Clinical Pharmacology — Rational Basis of Therapeutics,* University of California, San Francisco; March 19-23, *Four and One Half Days of Internal Medicine: What's New?,* Birmingham Veterans Administration Hospital, Birmingham, Alabama; and March 22-24, *Clinical Recognition and Management of Heart Disease,* University Hospital, Arizona Medical Center, Tucson, Arizona. Write to American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Sickle Cell Disease Seminar

The Delaware Academy of Family Physicians in cooperation with the National Foundation, Delaware Chapter, March of Dimes, is sponsoring a Sickle Cell Disease Seminar, Saturday, February 17, 1973 at the Academy of Medicine Building, 1925 Lovering Avenue, Wilmington, Delaware. Speakers include Marjorie Cates, M.D., Robert F. Murray, M.D., and Samuel Charache, M.D. with welcoming remarks by John Hanel, M.D. and introduction of speakers by Peter P. Potocki, M.D. Advance registration is required with a $3.00 fee (including luncheon). Contact: Delaware Academy of Family Physicians, 1925 Lovering Avenue, Wilmington, Delaware, 658-7586.

Surgeon's Annual Meeting Time and Topic Correction

Pierre L. LeRoy, M.D., President of the American College of Surgeons, Delaware Chapter, announces that the Chapter's Annual Meeting will be held in the Delaware Academy of Medicine, Tuesday, February 27th at 8 p.m. (dining room). The speaker will be Doctor Teruo Matsumoto from Hahnemann Hospital in Philadelphia, Pennsylvania. His topic is to be "Experimental Acupuncture in Animal Anesthesia."

Mediclinics Refresher Course

MEDICLINICS is sponsoring a postgraduate medical refresher course in Fort Lauderdale, Florida, March 5-15, 1973. Registration fee is $125. The course has been approved for 32 hours of credit by the American Academy of Family Physicians. Write to Mediclinics, 832 Central Medical Building, St. Paul, Minnesota, 55104.

Medicolegal Symposium

The American Bar Association and the American Medical Association are jointly sponsoring the 1973 National Medicolegal Symposium at the Las Vegas Hilton, Las Vegas, Nevada, March 22-25, 1973. The registration fee is $45 per person, including luncheon on Saturday, March 24th, and one copy of the printed proceedings of the Symposium, when published. Advance registration is recommended, and payment must accompany registration. For more information write: 1973 Medicolegal Symposium, American Bar Association, 1155 East 60th Street, Chicago, Illinois, 60637.

Cancer Conference

The American Cancer Society is sponsoring The Second National Conference on Cancer of the Colon and Rectum, September 27-29, 1973 at the Americana Hotel, Bal Harbour, Florida. Up-dated information by leading authorities in epidemiology, pathogenesis, etiology, host factors, detection, diagnosis, treatment, and rehabilitation will be presented. For information write: Sidney L. Arje, M.D., American Cancer Society's Second National Conference on Cancer of the Colon and Rectum, c/o American Cancer Society, 219 East 42nd Street, New York, New York, 10017.

Hair Growth Conference

The American Medical Association will sponsor a national conference on hair growth, May 21-22, at the Marriott Motor Hotel, Chicago, Illinois. The conference will deal with hair structure, growth, and factors that influence growth, and medical, cosmetic, and psychological aspects of hair growth. For more information contact: Frank Chappel, Committee on Cutaneous Health and Cosmetics, American Medical Association, 535 N. Dearborn Street, Chicago, Illinois, 60610.

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PROPHYLACTIC ANTIBIOTICS IN ARTERIAL SURGERY: A Personal Experience Covering 218 Operations

Physicians traditionally frown on the prophylactic use of antibiotics in surgery, believing they do not prevent infections and may even allow special complications such as super-infections. But here is a personal experience in 218 arterial operations that casts doubt on both contentions. Prophylactic antibiotics may thus enjoy a place in selected, high-risk operations.

Introduction

Richard Lennihan, Jr., M.D.

Wound infection remains a constant, bothersome threat in any surgical procedure, whereas sepsis involving an arterial suture line or vascular prosthesis can be a complete catastrophe. Dineen[1] reports a 73% mortality rate with an infected arterial suture line, and Fry[2] a 75% mortality when a synthetic prosthesis becomes infected. This report describes personal experience with the prophylactic use of antibiotics in 218 consecutive arterial operations performed from 1964 through 1971.

The Case against Prophylactic Antibiotics

There are many traditional arguments against the prophylactic use of antibiotics in surgery. The most incriminating is that they don't work; they simply do not reduce the incidence of wound infection. The comprehensive studies of Rocha,[3] Rousselot,[4] and Karl[5] using prophylactic, systemic antibiotics document this sad observation. (Table 1)

Editorial comments appear on page 55.

Most physicians prefer treating infections with the appropriate antibiotic, the "know the bug, then pick the drug" philosophy. But the surgeon must select his antibiotic before operation and start "prophylactic" treatment prior to making the incision. The choice is completely blind with no bacteriologic pairing of drug to bug. Since broad spectrum or combination drugs are usually employed, the normal flora of the body may be suppressed, thus cre-

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Dr. Lennihan is a senior member of the Department of Surgery at the Wilmington Medical Center.

TABLE 1

Evidence against prophylactic antibiotics. Wound infection rates using systemic antibiotics. Treated vs control

	Antibiotic	Control
Rocha (644 cases)	4.36%	3.0%
Rousselot (359 cases)	5.60%	4.4%
Karl (150 cases)	18.50%	12.9%

ating the setting for bacterial overgrowth and super-infection. Some of the drugs impair renal function. They all carry the risk of idiosyncratic reactions at any dose, and the hazard of toxicity at higher doses.

Taken together, these arguments point to ineffectiveness in preventing wound infection while exposing the patient to a significant rate of complication. Prohaska[6] has openly stated that "prophylactic antibiotics not only fail to control infection, but in fact, cause a higher incidence of post-operative infection of all kinds."

The Case for Prophylactic Antibiotics

If antibiotics can overcome established infection, they should be able to prevent it. This is a simple notion. It is well supported. Burke, in a long series of careful experiments, demonstrated that maximum suppression of infection will be achieved if the drug is present in the tissues at the time of bacterial contamination.[7] Effective suppression can be achieved for up to three hours after contamination is initiated. He employed systemic antibiotics. By contrast, Glotzer employed a bacitracin-neomycin mixture to irrigate experimental incisions one hour after they were contaminated by staph.[8] None of the incisions became infected, while 100% of those irrigated with saline alone developed sepsis.

These examples from the laboratory are matched by impressive clinical experience with systemic and local antibiotics. Carey was able to reduce the rate of positive cultures in a cardiac by-pass apparatus used for open heart surgery from 44.5% to 4.9% by injecting antibiotics directly into the pump circuit.[9] Local antibiotics have been used to irrigate incisions for years with encouraging results reported by Forbes,[10] Pulaski,[11], Vaughn,[12] and Gibson.[13] (Table 2)

Two essential facts emerge from these studies: 1) effectiveness depends on timing, and 2) effectiveness depends on dosage-route factors.

Personal Cases and the Prophylactic Antibiotic Program Employed

From January 1, 1964 through December 31, 1971, all patients requiring direct arterial surgery received prophylactic antibiotics. 193 patients underwent 218 operations.

For simplicity, the operations have been grouped by region of the body involved, nature of the arterial closure, or type of graft employed. (Table 3)

The selection and dose of antibiotics change slightly during the 1964-1971 period, though the following approach has remained standard for many years.

1. Systemic antibiotic: cephalothin: 1) Before operation: cephalothin 1.0 grams given I.M. the evening prior to operation and two hours before surgery. 2) During operation: cephalothin 2.0 grams in the first 1000 cc of intravenous fluid then 1.0 grams per 1000 of I.V. fluids thereafter. This provides for continuous administration of the antibiotic throughout the operation. 3) After operation: cephalothin 2.0 grams every four hours I.V. via Buretrol technique. At the end of 48-60 hours the dose is rapidly decreased and the antibiotic discontinued at four to five days from operation. In 1971, 80% of the infections within the Wilmington Medical Center were caused by four organisms *(Staphylococcus, E. Coli, Klebsiella,* and *Proteus).* Of 400 strains of these organisms tested, 98% proved sensitive to cephalothin.[14]
2. Local antibiotic: kanamycin and bacitracin: The operative areas are frequently and liberally irrigated with an antibiotic solution containing kanamycin 1.0 grams and bacitracin 50,000 units in 500 cc of saline.

TABLE 2

Evidence for prophylactic antibiotics. Wound infection rates using local antibiotics: Treated vs control

	Antibiotic	Control
Forbes (5419 general surgical cases)	1%	6.0%
Pulaski (250 appendectomies)	3%	10.0%
Vaughn (400 laparotomies)	1%	7.0%
Gibson (500 neurosurgical cases)	1%	8.5%

Discussion of Results and Complications

This report shares a small experience employing an aggressive program of prophylactic antibiotics in direct arterial operations performed during an eight-year period. Every patient received antibiotics. There was no randomization of cases . There was no attempt to use the double-blind technique of a prospective and scientific study. The results are interesting; the lack of significant complications is reassuring.

Since the results and complications of this program both focus on the same issue — infection — they can best be discussed together. What rate of wound infection might be anticipated in 200 consecutive cases from a community hospital? We do not know the answer from surgical experience in Wilmington so we must accept the best information from elsewhere. A recent tally of 11,600 mostly clean operations from five university hospitals in this country revealed a 5.3% wound infection rate.[15] The procedures ranged from simple hernias to complicated bowel resections.

The vascular patients in this series included many with numerous risk factors predisposing to higher wound infection rates — older age and diabetic individuals, obesity, regional ischemia, and even gangrene with infection about the toes or foot. The operations were lengthy. Many patients endured periods of hypotension that reduced their natural resistance to infection. Patients were anticoagulated during operation; post-operative oozing into the surgical field was common. The dissection required for vascular reconstruction often created "dead" spaces that were difficult to eliminate in closure. Such spaces accumulate blood and serum as a nest for sepsis. When teflon or dacron grafts were used, they presented the challenge of the implanted foreign body. Further, these operations involve the participation of multiple personnel within the operating room so the human source of bacterial contamination was tremendously increased. Thus, these 200 vascular cases from a community practice should produce a significant number of wound infections.

There were no primary wound infections. Two patients developed ischemic necrosis in the skin of the thigh secondary to subcutaneous dissection of the saphenous vein in preparation for femoral to popliteal grafting. Many patients showed ischemia along the margins of femoral incisions that crossed the crease of

TABLE 3

Analysis of operations in this report.

	Number of patients	Number of operations	Direct closure of vein patch	Vein graft	Synthetic: graft or patch
Carotid	30	30	28	0	2
Aorto-iliac	67	67	8	5	54
Femoral-popliteal	91	116	48	43	25
Miscellaneous	5	5	2	1	2
	193	218	86	49	83

the groin. These ischemic areas ultimately harbored bacteria, with positive cultures, but should not be considered primary infections. Drains were employed whenever oozing seemed excessive at the end of operation. Two patients collected hematomas despite the drains. Both drain sites ultimately grew out a mixed bacterial flora, though neither patient developed a clinically significant infection. One patient disrupted a femoral suture line and bled. His situation was unique, beginning with thrombosis of an aortic aneurysm that required emergency resection and aortic to femoral grafting. He oozed continuously during the operation and went on to frank thrombocytopenia and bleeding in the clinical picture of a diffuse intravascular coagulopathy. A left femoral to popliteal graft was needed the next day. This required a re-opening of the left groin incision with prolonged exposure of the tissues to possible infection. This second graft failed because of thrombosis within the tibial vessels of the lower leg. He later underwent mid-thigh amputation. The amputation closure drained purulent material for a prolonged period. Several weeks later an abscess appeared on the left groin with subsequent breakdown of the teflon to artery anastomsis. Was this a failure of the original antibiotic umbrella, or ascneding sepsis from the nearby and contaminated amputation?

One patient displayed an antibiotic fever characterized by a spiking temperature for five days immediately after operation. It quickly subsided when cephalothin was stopped. Early in the experience we had numerous cases of superficial thrombophlebitis in the arms associated with the indwelling venous catheters and the intravenous cephalotin. This has been largely eliminated by changing the intravenous line every 48 hours.

One patient suffered transient uremia following operation. He was diabetic and had dry gangrene of the forefoot due to aorto-iliac obstruction. At the time of admission his BUN was 90 mg/100 m. He was treated medically for several weeks until it was felt his renal status could withstand surgery. Aortic to femoral bifurcation grafting was performed with good restoration of flow and salvage of the extremity. He developed transient uremia during the post-operative phase.

One patient died of renal failure. At the time of original operation he had iliac obstruction seemingly due to a localized dissection within the iliac artery. Iliac to femoral bypass graft was performed with good restoration of flow to his ischemic extremity. During the next four to six weeks he showed evidence of retrograde aortic dissection that ultimately extended to the level of the left subclavian artery. Aortograms showed mechanical obstruction of both renal arteries.

At the start of this program in 1964, I feared the vigorous use of antibiotics would indeed permit the emergence of bacterial overgrowth and secondary super-infection. This did not occur. There was no super-infection. In fact, there were no serious pulmonary, GI, or GU infections that I would blame on the antibiotic if one can accept the special problems associated with major vascular reconstruction. Aortic resection and grafting serve as an example. The operation is lengthy and usually performed under endotracheal general anesthesis. As a consequence, most patients develop a degree of tracheal bronchitis, pneumonitis, and atelectasis with cough, sputum, and the physical signs of pulmonary infection. Pulmonary problems did not appear to increase during the years of the antibiotic program. The small intestine is eviscerated during the operation to facilitate exposure of the aorta. Post-operative ileus develops as a consequence of this displacement. When the bowel regains tone, it oftens evacuates a greenish-brown, foul-smelling liquid. This is quite usual and does not represent enterocolitis secondary to bacterial overgrowth. Most physicians monitor urinary output of the patient for 24-48 hours by indwelling Foley catheters. Some male patients experience urinary retention, prostatitis, and cystitis when the catheter is removed. This occurred during the antibiotic years of the study though no more frequently or seriously than during the previous decade.

Summary

This report documents the use of prophylactic antibiotics in 218 arterial operations performed from 1964 through 1971. Systemic cephalothin was employed in conjunction with local irrigation of the wounds using a solution of kanamycin and bacitracin. There were no primary wound infections. There was no instance of bacterial overgrowth with secondary super-infections. Only one significant infection developed that might be considered failure of the antibiotic program.

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CONSENT, CONFIDENTIALITY, THE LAW AND ADOLESCENTS

When an adolescent in need seeks confidential care and doesn't want his folks to know, the physician is often confronted by an uneasy dilemma. Should the youth be treated on his own consent or not, and how risky is it in the eyes of "the law"?

Adele D. Hofmann, M.D.

Resolution of the conflicts between consent, confidentiality, and the law is essential to the health care of adolescents. The dilemma frequently arises in three types of situations; emancipated minors, minors with secret needs and minors with emergencies.

The Emancipated Minor

Let us first consider the emancipated minor, defined as a youth who by being away from home or by his maturity is managing his own affairs. In this context we must examine what giving consent implies and what is the role of parents. To consent to health care is to agree to a contract between the patient and the doctor. On the patient's side it must be an informed consent. Minor children are deemed incapable of giving such consent, and parents act in their offspring's behalf. But that factor in law which differentiates an individual's capacity to give consent one minute after his 18th or 21st birthday and not a moment before is a legal concept without psychological validity. The youth's whole life has been a gradual progression of increasing responsibility and decision making preparatory to his entering the adult world, and many youths have been making many of their own decisions about their

Editorial comments appear on page 52.

Dr. Hofmann is Director, Adolescent Medical Unit, New York University Medical Center, Bellevue Hospital, New York, New York.

This paper was presented to the Department of Pediatrics, Wilmington Medical Center.

lives and the conduct of their affairs for some time prior to legal majority.

The fact that we have reduced the voting age to 18 is illustrative of society's recognition of the ability of young people to make valid responsible decisions on their own. Who is to say where this reduction in that age of capacity stops and for what circumstances? There is, for instance, an extraordinary confusion in New York law which allows a girl of 16 to purchase contraceptives but does not allow her to consent to intercourse until age 17, nor marriage until she is 18 years of age.

Certainly there are youths who have unquestionably assumed an adult role and are considered emancipated. No one would dispute the right of a 17-year-old secretary working and living away from home to consent to her own health care. But what about the alienated run-away? While it may not be to the parents' liking and against their wishes, the youngster still is living on his own and is taking care of his daily needs as best he can. If he is able to understand the nature of the prescribed medical treatment, should not this youngster be provided care when he has demonstrated enough good sense to seek it in the first place? To require such a youth to notify his parents may well be to effectively deny care. This does not mean that concomitant efforts to restore the family unit cannot and indeed should not also be undertaken.

If the primary reason for requiring parental consent is to protect the minor who is unable to understand the nature of the care he is to receive, as appears to be the case in law, then we can develop a theory of the mature minor and consider bestowing the right of self consent on any youth who demonstrates sufficient maturity to understand the nature of the treatment he is consenting to. Such a definition would allow ready separation between the extremes of the youth who wishes contraception or venereal disease treatment and the youth who needs extensive surgery with an uncertain outcome.

Minors with Secret Needs

Up to this point we have not considered the role of parents other than in relation to providing an informed consent. The problem is certainly more complex and brings us to consider our second situation: that of a youth with a sensitive health problem which he is unlikely to reveal to his family until the condition can no longer be hidden. This area is generally the most difficult to solve as it relates to youngsters living at home but experimenting with forbidden fruits. These are adolescents who are sexually active and risking venereal disease or pregnancy and others who are into the drug abuse scene. It also includes youths who are emotionally troubled and want psychiatric help but are unable to involve their parents, who may themselves be disturbed yet will deny their need and that of their child.

It is certainly axiomatic that an adolescent is best off in a family, receiving the support and guidance of concerned and devoted parents. But it is necessary to recognize that youths and families are not always in touch with each other. Adolescence is a time of struggle for independence and a search for identity. The teen-ager must try on new thoughts and ideas and experiment with new ways of doing things to find himself as an individual apart from his parents. Much of this exploration takes part unbeknownst to mothers and fathers. For many families the earlier mutual trust that existed is now gone and suspicions abound. Parents are convinced that their youngster is up to no good when out late at night, and adolescents are positive that their families are spying on them and just do not understand anyway. Some teenagers will get themselves into harmful situations which cannot be prevented short of perpetually handcuffing the youth to the home TV set. Hopefully, earlier parental inculcation of moral codes and teachings on how to avoid potentially dangerous situations will prevail during these teen-aged years. But when the youth does get into trouble or needs help, it is certainly unlikely that his parents will be the first to know. Thus a girl will keep her need for contraception to herself or suffer in lonely mental torture over missed menstrual periods for months. A youth may experience excruciating dysuria with venereal disease. The casual heroin snorter may develop a five-bag-a-day habit. And no adult who can help will know until the problem has become so far advanced that it can no longer be hidden.

It is not necessary to go into the statistics on teen-aged pregnancies, venereal disease, and drug abuse. The disastrous and tragic frequency of these conditions today and the incapacity of parents and society to control them are well known. But we must consider that if adolescents cannot and will not tell their families at a time when prevention or early intervention could halt progression to a more advanced state, then medicine best fullfills its obligation to heal by waiving its requirement of parental consent, assuring the youth of confidentiality, and encouraging adolescents to seek early help.

It is natural for parents to say, "I understand the problem, but I want to know and the doctor should tell me anyway even if my child doesn't agree." There is no rebuttal to this. The parent's point of view is well taken. I can only point out that their child is best benefited by early treatment, and while we might wish otherwise, such cannot be provided if it is conditional on present or even future parental knowledge. If a confidence is violated just once, trust will be lost and not only will that particular youth never reveal anything of a sensitive nature again, but the word will rapidly spread. The doctor or hospital who "tells on kids" quickly becomes known to all in the community, will not receive future confidences from any teen-ager, and ceases to be able to help.

Emergencies

The third area where adolescents often have problems about receiving care on their own is in emergencies. Most hospitals and doctors have little difficulty in deciding to institute care when the illness or injury imposes an immediate threat to life. The law will clearly support their position. But there are a whole host of acute situations where there is not a clearly implied threat to life, and in these situations physicians generally tend to hold off on treatment until parents are contacted even if this takes many hours. In most states the law is quite unclear as to just what is an emergency and does not provide physicians with appropriate guidelines.

The problem is particularly prevalent among adolescents. Young people today spend a large part of their time away from home. Both parents frequently work and may not be available. Other parents may have younger children to care for and are simply unable to accompany a mildly ill teen-ager to the hospital. Thus in any emergency room adolescents will regularly present themselves for care without an accompanying mother or father. What if the condition is painful and delay in care imposes prolonged suffering? Does not the alleviation of pain and suffering also constitute emergency care? What about conditions where delay in care could have subsequent deleterious albeit not life-threatening effects, such as the youth with a strep throat? Thus definition of what constitutes emergency care must be redrawn to allow physicians to use their best judgement in providing whatever treatment will alleviate pain and suffering and will prevent deleterious consequences of any nature.

In all these areas medicine must recognize the adolescent as an individual by delivering age-oriented care responsive to his needs and capacities. In this way not only will teen-agers get the care they need at the earliest possible time, but they also will develop trust and confidence in doctors, who then can be of greater assistance. This also has significant implications for their future adult attitudes toward health care.

The Law and Minors

What is the state of the law on these matters today? Prior to an upsurge in enabling legislation over the past five years, few states had any provisions which specifically related to the health care of minors. Guidelines as to what one could and couldn't do largely came out of interpretation of the common law and out of the results of court action. Medical care is regarded as a form of contract between patient and physician. Common law states that a minor may not enter into a contract. If medical care is rendered without a contract, then the physician performs an act on the body of an unconsenting individual, ie commits assault and battery. Malpractice is not an issue here and stands apart from whether assault and battery has been committed or not. In terms of assessing one's liability it is also necessary to consider whether the action resulted in damages or not. It would be almost impossible for a parent to successfully take up and pursue a case where no damages resulted from the doctor's treatment, particularly if the patient had been clearly benefited and even more so if the youth understood the nature of what was being done to him.

In regards to treating adolescents, attorneys concerned with this matter have found no case to have been successfully prosecuted against a physician for treating a minor over the age of 15 for any purpose without parental consent, nor have there been any judgements against a doctor who provided contraception or treatment of venereal disease to any age youth.[1] Successfully prosecuted cases on the issue of consent for younger persons have nearly all related to the performance of surgical procedures, the administration of experimental drugs, or the use of regular drugs from which damaging side effects occurred.

The law is also increasingly coming to support the position that adolescent youths have the right to determine events pertaining to their own lives. In many instances court rulings have well established the youngster's right to decide on his own clothing style, appearance, and hair length. Legal rulings on student's rights now clearly support his freedom from adult intervention in lawful dissent, freedom of speech, and right to an education.[2] In an increasing number of states it has been ruled that a girl may not be barred from school because of pregnancy. These and similar decisions all combine to develop the theory of the mature minor and give support to the physician who renders treatment to a youth he adjudges to be mature enough to know what he is consenting to.

Specific legislation pertaining to minors' consent to health care also embodies the theory of the mature minor. Mississippi specifically provides that a minor intelligent enough to understand the nature of the recommended treatment may give self consent. California provides that any minor 15 years of age or older and away from home has the capacity to consent to his own health care. Other states make similar provisions for emancipated or married minors. Sometimes, however, it is not entirely clear as to what constitutes emancipation.

The law also increasingly recognizes that under certain circumstances youths will not seek treatment unless their confidentiality is assured. At least 48 states now have legislation allowing the physician to treat a minor for venereal disease without parental consent. Many states also have similar provisions pertaining to pregnancy and a few to contraception.

Delaware now also has one of the most helpful and responsible statutes in the country. These laws specifically allow a minor 12 years or over to consent to medical treatment for contagious diseases, including venereal disease; a girl 12 years or over can consent to any lawful medical treatment for pregnancy; any minor who is married or 18 years of age or older may consent to all forms of health care, and minor parents may give consent for care of their child; in addition minors may also consent to care for trauma, exposure to toxic substances, or for any disease or pathology "which may, in the judgement of the attending personnel . . ., if untreated, reasonably be expected to threaten the health or life of said minor," provided "reasonable efforts" have been made to obtain parental consent.

For the most part current legislative trends tend to deal with limited specific circumstances and specific conditions such as emancipation, being married, pregnancy, or venereal disease. But a few states are coming to enact broader, comprehensive bills which set forth general guidelines for a number of circumstances. Pennsylvania and Maryland states are typical. The newest addition to the roster comes from Alabama and allows any minor 14 years of age or older to consent to medical, dental, health, and mental health services. A minor of any age may consent to the diagnosis and treatment of pregnancy, venereal disease, drug dependency, alcoholism, and reportable diseases. Services may also be rendered to minors without parental consent when the physician judges that an attempt to secure such consent would result in delay of care which would increase the risk to minor's life, health, or mental health. Perhaps the minimum age of 14 for anything and everything is overdoing it a bit. But this is illustrative of the kind of broad legislation which is necessary to solve the problem of getting medical treatment to adolescents when they need it.

Obviously it requires a firm knowledge to wend one's way state by state through what is permissable and what is not. But in general the law is much more flexible than most doctors believe, and treating minors on their own consent really has much less liability than is supposed. Many groups such as adolescent clinics, free clinics, and family planning centers have been regularly treating thousands of minors across the country on their own consent for years, and to my knowledge none has ever been sued.

Equally significant to the change in the law is the change in attitudes of physicians themselves. The American Medical Association, The American Academy of Pediatrics, the Society for Adolescent Medicine, The American College of Obstetrics and Gynecology, and the American Academy of Family Physicians as well as Planned Parenthood-World Population all now recommend the prescription of contraception for sexually active minors and that the doctors should be able to be legally free to use their best judgement in determining how this may be implemented. This clearly suggests that medical societies are also coming to recognize the minor's need for confidentiality.

Thus considering all the current trends, it is probably valid to state that even where the law does not specifically provide, it is, in the words of Pilpel and Wechsler, attorneys for Planned Parenthood, "unlikely that a suit could be pressed successfully against a physician who provided clearly needed medical treatment to a minor, without parental consent but for the minor's benefit, of a nature and outcome which the minor understood."[3]

But in conclusion I would like to suggest that enabling laws and freer attitudes are just the beginning in providing adolescents with meaningful age-oriented care. Adding adolescent medicine to the training experience of the primary care physician is just as vital as is changing laws. For medicine to come to regard adolescents as individuals with specific health problems which need solutions different from those needed at other times in life is essential, and without broad attitudinal changes new laws and liberal interpretations will have little meaning.

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ALCOHOLIC AUTHORS

Of the seven Americans who were awarded the Nobel Prize for literature, four, according to their biographers, were alcoholics and a fifth drank heavily. If we compile a list of well-known American writers of the past century, quite possibly one-third to one-half could be considered alcoholic.

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WHAT HAPPENS TO THE PATIENT'S RELIGION?

Chaplain Robert B. Reeves, Jr., S.T.M.

What happens to a patient's religious life under the accumulation of stresses we have been considering? The same thing that happens to every other personal capacity: his religious feelings and behavior are reduced to more childlike levels. He retraces, in reverse, the path along which his religious life developed. Let us look briefly at that developmental path.

A Child's Religion

If we take religion to be our response in feeling, thought, and action to the power we believe controls our destiny, then religion begins for the child in his relations to his parents. The child starts out in life helpless yet omnipotent, dependent utterly upon his parents, yet in almost absolute control of them. He can do nothing for himself, but he cries and they come. He is not aware of them as separate beings at all, but only as extensions of his will. They exist for him and him alone. He is the center of the universe. His trust in life is undisturbed. This is the magic-working stage, when the infant has only to make a signal and reality responds at once to his demands.

But this stage usually does not last long. Parents soon become selective about the infant's cries to which they will at once respond. They begin to set up schedules for eating and sleeping. Mommie scolds or slaps if baby bites her nipple, and Daddy gruffly puts him down if he wets or vomits. The child discovers that he is not omnipotent, that parents do not always answer to his beck and call. This is a very disturbing discovery because it seems to leave him suddenly helpless and unsure, where before he could trust implicitly in his parents' loving care.

Normally it does not take long for the child to learn how to forestall or alleviate such disturbance. He cannot command them as he did before, but by being "good" he can keep them on his side. So he begins to control his biting and spewing, his grabbing and pulling, and starts to feed himself and use the potty, not because he wants to, but because that is the way to keep his parents saying "Good boy!" They, not he, are omnipotent, and he must retain their favor. Whatever it costs, it pays off in security. *Quid pro quo.* This is the bargaining stage. It lasts for quite a while, and some people never do outgrow it.

Usually, however, by the time he has gone to school awhile, the child discovers that his parents are not omnipotent; that there are other powerful people, such as teachers, policemen, and bosses, who can tell his parents what to do, and still others who can tell the teachers, policemen, and bosses what to do. As he receives religious instruction in home or Sunday School, he becomes vaguely aware that above all those powers is still another, called "God," who does all sorts of fantastic things, sometimes nice and sometimes awful, but *what He says, goes.*

Depending on how it worked with his parents, the child may for awhile try working magic or bargaining with God, and sometimes it seems to be so successful that it becomes fixed as his religious pattern for life. But ideally the child comes in time to recognize that it does not work with God, that there is a certain hard core of reality that cannot be changed, certain rules that cannot with impunity be broken, certain sequences of cause and effect that cannot be called off. By the

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Chaplain Reeves is Chaplain, Presbyterian Hospital, New York City; Clinical Associate in Psychiatry and Religion, Union Theological Seminary; member of the Columbia University Faculty Seminar; past president of the College of Chaplains, The American Protestant Hospital Association.

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time he has emerged from early adolescence, he recognizes large areas of experience where he has to say, "That's the way things are."

This is the stage of maturity in religion, when the reality of the world, as God has made it and rules over it, is faced and accepted as frame-of-reference for our lives. The prayer attributed to Reinhold Niebuhr, and regularly used by members of Alcoholics Anonymous, expresses exactly the attitude of adulthood in religion: "Lord, give me the strength to change what can be changed, the grace to accept what cannot be changed, and the wisdom to see the difference."

Stress and One's Religion

When the stresses of sickness and hospitalization start to reduce a person, this developmental process tends to be reversed. The mature acceptance of reality that may have been characteristic of a person when he was well begins to falter a little as sickness reduces him toward helplessness, and he begins to fall back on the bargaining pattern that worked so well with his parents in childhood. He starts trying to bargain with God: "O Lord, if You will only make me well, I'll never neglect my church again!" Or he may remind God how good a man he has been, and how unfair it is that he should have to suffer so. Or he may start to dredge his past and to condemn himself for failures and wrongs for which he is sure his sickness is a punishment. The question, "Why has this happened to me?" gnaws and gnaws at his consciousness, and sooner or later his conscience comes up with a guilty answer. He is reduced to the emotional level of his childhood, when, if a bargain did not work, it meant that he must have been bad.

If stress reduces him still further, he may fall back to the earliest emotional level and begin to show the demanding, omnipotent side of infantile helplessness. His prayer, like his demands upon his nurse, family, and sometimes his doctor and his pastor, becomes impatient, angry, imperious. "God, damn it, get me out of this!"

When this effort to force God's hand produces no result, the patient may start to become panicky and frantic, so that the quantity and frequency and vehemence of prayer become all-important. Candles are burning at every altar, dozens of friends are praying for him, he has the chaplain calling every day. He forces the magic every way he can. And if it still does not work, he begins to sink into despair, not guilt, because he is reduced below the level of goodness and badness to the despair of utter forsakenness, abandonment.

This reduction in religion, from mature facing of reality to bargaining, and from bargaining to magic-working, is rarely seen in such clear-cut stages. Patients move up and down the scale from day to day and hour to hour, sometimes with sudden reversals of direction, depending not only on the changing severity of the stresses they are under, but also on the level of maturity they had achieved when well.

The patient who in normal life had shown a high degree of ability to accept and adjust to reality, is likely at first to fight his sickness, to resist the pressures toward reduction, and to try to hold on to himself as an adult human being. When he does finally accept the fact that he is sick, he will probably adjust to it with a minimum of strain, and be relatively untroubled in his dependency, apologizing for it, to be sure, but without tormenting self-reproach. He is reduced and very much aware of it, but his ambivalence is relatively mild, and he shows little tendency to try to bargain or work magic with God. His prayer in all likelihood is for grace to take what a day may bring, in trust that God knows best what is good for him. Even though he be so weak that he cannot pray, he does not fret about it, but somehow is able to ride it out, roll with the punches. And when the stresses he is under start easing off, he is apt to bounce back very fast, and soon be protesting that all this fussing over him is just a lot of foolishness.

Sickness and Latent Childishness

Not all patients, however, are that mature even in the best of health. Many of them have carried over into adult years lingering tendencies to bargain or work magic. And it is usually in the area of religion (for it is sadly all too true that the level of a great deal of church life, religious teaching, and devotional practice in America is infantile). Sickness quickly evokes the patient's latent childishness and brings his bargaining or magic-working tendencies in religion almost immediately to the fore. He starts almost at once to ask, "Why has God let me down?" Or to pray that the lab tests will be negative, or that surgery will not be necessary, or that the cancer will go away.

And yet, because in some areas of experience the patient usually has achieved maturity, his reduction in religion under stress is likely to stir up strong mixed feelings. He sends up bargaining prayers, embarrassed by the knowledge that reality does not yield to bargaining. He grasps at magic, uneasy in the knowledge that the ways of nature cannot be coerced. He tells the chaplain, "I know I shouldn't feel this way, but . . . " and launches into confused complaint about the ways of God. He is very unpredictable and therefore difficult to deal with. His relationships with staff are more often stressful than not, for in his reduced condition he feels toward them as he feels toward God, ambivalently; he blows hot and cold.

Manifestations of Reduction

Occasionally there will be a patient who emotionally has never grown up at all, whose usual way of life is a continual wheedling, cajoling, and manipulating of those who have power over him. He may have been lucky enough in his fortunes to assume that he was also getting away with it with God. Some of our most high-powered people in business, politics, and the professions belong to this category, and clergymen are no exception. When one of them lands in the hospital, he does not regress to childhood, he simply changes the scene of his activity. If his bargaining or magic appears to work, then "faith is the answer" and God is a "great guy." No one will ever know how many sizeable gifts to hospitals have come as a result of such apparently successful bargaining with God.

But if the bargaining or magic does not work, the guilt or anger, and eventually depression or despair, that follow, are beyond anything one sees in ordinary mortals. There is little ambivalence: it is either the overweening delight of the child who has got his way, or the bitter sorrow of the spoiled child to whom the answer has been "No."

Although many of these manifestations of reduction might come as a surprise to one who has known the patient only when he was well in adult years, they would not be surprising to one who had known him as a child. As in every other way, so also in religion, the early patterns persist as an underlay to his later style of life. When stress piles up and normal controls become too difficult for the patient to maintain, the childhood responses he has carried in reserve all through the years come to the surface. They are not matters of either conscious volition or caprice. They are life-saving reactions, deep out of his past, recalled in answer to a threat to his survival. Automatically he uses them.

The Layers of Man

We are so in the habit of intellectualizing religious faith that we often tend to disparage its roots in early childhood experience. The capacity for faith is commonly regarded as part of man's higher nature, a matter of spiritual endowment, over and above his lower nature, which is physical. In the classic presentations of the Christian doctrine of man these are usually schematized in layers. At the top is man's spiritual capacity. Then, in descending order, come intellect, will, imagination, and memory. These are all levels of his higher nature. Below memory a line is ordinarily drawn to mark the break between higher and lower. The lower capacities, expressions of man's physical nature, are emotion, sensation, desire and instinct.

Religious faith, then, is taken to be an expression of the mind or soul, transcending the limitations of the body. Since early childhood is dominated by the pursuit and satisfaction of bodily needs, it is felt to have little influence on spirituality, which is thought to come later in life as the higher powers are developed. The tendency, therefore, is to take a very lofty view of the spiritual life, to clothe it in highly rationalistic symbols, and to deprecate the religious experiences of childhood as somewhat primitive and crude. We take pride in growing out of the simple, instinctual behavior of our early years into the highly controlled sophistication of maturity.

Angelism

Accordingly, we tend to see our highest life as that which is least captive to the demands of our physical nature, farthest removed from the body-centeredness of childhood. This is known as "angelism," and it is a complete perversion of the Biblical understanding of man as creature. It has alienated us from our own true being, so that when we are reduced toward childhood under stress, we are shocked, dismayed, undone. In at least three ways, it adds to the stresses under which the patient suffers.

First, angelism has set up in us a lurking sense of shame for the body and its functions, centered chiefly in the organs and processes of elimination and reproduction, which are felt to be unclean and bestial. In the hospital, this sense of shame makes especially acute the feelings of chagrin that patients almost always have about bedbaths, bedpans, urinals, and catheters, and about such accidents as wetting, soiling, or vomiting. These things are not felt to be merely annoying and inconvenient, as they are, but a shameful, disgraceful regression to childhood, and a betrayal of our spiritual and intellectual status. The stronger a patient's ambivalence about these aspects of reduction, the more likely it is that an underlying sense of angelistic shame is plaguing him.

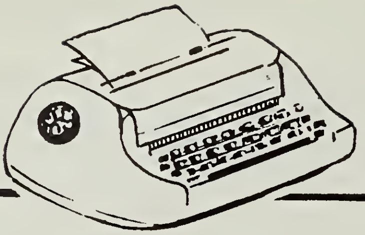
Second, angelism has made it difficult for us to accept negative feelings such as fear, anger, and sorrow. If the life of the spirit is thought to be higher than the life of the body, then the spirit ought to be in control over all the feelings that accompany bodily activity. When we are in physical danger and are afraid, the spirit ought to rise above fear and be undismayed. When we are hurt or in pain and are angry about it, the life of the soul ought serenely push the rage back down. When we are bereaved and cry out in sorrow, the spirit ought force back the tears and wipe away the grief. We seem to think that to have such feelings, let alone express them, is a denial of our faith, and that if we are religious we should be able to renounce them, or at least keep them down. So we are distrustful of emotion and engage in a dreadful game of make-believe, insisting that everything is fine when inwardly we are boiling mad, laughing on the outside when inside we are crying, pretending to be brave and noble when within we quake.

A terrible amount of the distress of patients in the hospital is caused by their inability to live with their emotions. As reduction brings these negative feelings, the patient is often assailed by an awful sense of unworthiness. He condemns himself for his childishness which to him means failure to keep his faith.

A third consequence of angelism is the inability to accept our mortal limitations. Weakness or dependency of any kind is likely to bewilder and strike us full of guilt, especially when we are reduced to discouragement, doubt, or inability to pray. This last, inability to pray, occurs far more frequently in the hospital than most people have any idea. As spiritual beings, we are taught, we should "pray without ceasing." But a good many things can happen to reduce us to a helpless, infantile, dependent state, where we cannot do anything for ourselves, cannot even pray. And if we have never learned to accept ourselves as mortal, limited creatures, then all we can see is that we have failed, have not kept faith, have betrayed God; and in our guilt we sink into depression and turn our faces to the wall, convinced that we deserve to die, and often do die, for just that reason.

The root of the trouble is alienation from ourselves because of this angelistic view of our nature. We are dismayed by our own humanity, unable to accept our creatureliness as proper to our being, unable to love ourselves. This, of all the stresses a patient may suffer, can be the most disturbing.

A third form of stress, what can happen in pastoral care, is described in Part Three of Chaplain Reeves' presentation. This part is available through Chaplain Lynwood Swanson, Wilmington Medical Center, Wilmington, Delaware.



Special Reports

SPECIAL REPORT ON PHYSICIANS' UNIONS: WHAT THEY ARE . . . RECENT DEVELOPMENTS . . . LEGAL ASPECTS

Last November, a letter to *American Medical News* from a San Francisco physician concluded with the statement: "I, for one, will continue to treat without charge my share of those who need my services and cannot pay, to teach without compensation the next generation of my fellow doctors, and to be the most conscientious doctor that circumstances will allow. But I'm for trading my badge of virtue for a union dues book."

In the months following this letter, the topic of unions for physicians has been a recurring theme in the press. An article in *Medical World News* offers one explanation of why some physicians are now interested in unionization. "In the seven years since the AMA lost its fight against Medicare, doctors who felt convinced that economic and political pressures on private practice would sooner or later become unbearable have groped for ways to organize and confront third parties with collective strength."

There is no doubt that physicians in various parts of the country are seeking ways and means to bolster their ability to resist unwanted government encroachments. There is also no doubt that the success of trade union members in improving their working conditions and wages through collective bargaining poses an attractive thought to physicians seeking an "escape" from political domination. A sampling of the articles in the press on this subject reveals a growing list of organizations entering this field. The April 3 issue of *American Medical News* reports that 30 Las Vegas physicians have formed the nation's first labor-affiliated union of physicians in private practice: the Nevada Physicians Union Local 676 of the Service Employees International Union, AFL-CIO. A recent edition of the *San Francisco Chronicle* notes that some 200 Bay Area physicians attended the first meeting of the Union of American Physicians in San Francisco.

The *Wall Street Journal* of March 6 discusses efforts by interns and residents in California and Chicago to form unions, noting that the Chicago group is considering affiliation with the AFL-CIO's Amalgamated Meat Cutters and Butcher Workmen of North America. A nationally chartered organization called the American Physician's Guild, with headquarters in Florida and branches in five states, the *American Medical News* reports, is urging a nationwide campaign to have physicians form "union-type" associations. The April 14 issue of *Medical World News* features an article titled "Doctors' New Bag Out West Is Unionism" and adds two additional organizations to those mentioned above, the San Antonio-based American Physicians Union and the Massachusetts Federation of Physicians.

Taken together, these and similar articles raise fundamental questions for the medical profession. They also present the reader with a veritable jungle of conflicting information and opinions. As a result, CMA feels that a thorough and factual examination of the physicians' union concept is called for.

What Exactly Is a "Union"?

With all the recent discussion of unions and "union-type" organizations for physicians, some particularly basic questions often have been overlooked: Exactly what constitutes a union? Who may form a union? What are a union's powers — both in regard to its members and in negotiating? In the United States, the answers to these questions have been spelled out in legislation and legal decisions over the years.

In law, a "union" or "trade union" is an as-

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sociation of (1) employees having a common employer; or (2) employees whose employers are engaged in a common industry; or (3) employees whose employers hire people in a specific trade or occupation. In each instance, the relationship of employer-employee must be involved. These organizations of employees have been given legal recognition to permit collective bargaining for the purpose of improving such terms and conditions of employment as wages, working environment and fringe benefits.

The weapons that unions have to enforce their bargaining demands are those of strike, threat of strike, or boycott. In connection with collective bargaining for improved terms of employment, the law sanctions strikes and, under some circumstances, boycott. Certain types of boycotts, such as secondary boycotts, are illegal.

What are a union's powers in regard to its members? In its 1959 decision in the case of Chavex vs. Sargent, the California Supreme Court quoted the following statement of the relationship between a union and its members:

"First, a union in collective bargaining acts as the representative of every worker within the bargaining unit. It speaks for him, makes choices of policies which vitally affect him, and negotiates a contract which binds him. His wages, his seniority. his holidays, and even his retirement are all governed by this contract which becomes the basic law of his working life. The union in bargaining helps make laws; in processing grievances acts to enforce those laws; and in settling grievances helps interpret and apply those laws. It is the worker's economic legislature, policeman, and judge. The union, in short, is the worker's industrial government. The union's power is the power to govern the working lives of those for whom it bargains, and like all governing power should be exercised democratically."

As this decision clearly states, a union exercises considerable power over the lives of its members. Furthermore, the courts have made it quite clear that members are committed to abide by union policies, whether they agree or not. A good illustration of this is the case of Cecil B. de Mille, who was ousted from a union for refusing to pay a $1 levy for political activities. As a matter of principle, de Mille fought the case all the way to the Supreme Court and lost.

Within the narrow framework allowed unions, these organizations of employees have been granted certain exemptions from the antitrust laws.

What Do These Legal Points Mean for Physicians' Unions?

A recent letter to physicians calling upon them to form a "union" states: "It has been argued that by descending into the arena of collective bargaining we, as doctors of medicine, will lose our mantle of professionalism. We have only to look at our younger colleagues who, in spite of their as-yet untarnished idealism, have organized and won a decent wage for interns and house officers."

Elsewhere, the same letter states: "Without delving too deeply into the laws of economics it is easy to see that the physician has long ceased to be an independent entrepreneur and has in fact become an employee, either of insurance companies or of the government."

These statements raise a significant legal point and one basic to any discussion of physicians' unions. That is a clear distinction exists — as far as labor law is concerned — between physicians who are employees and private-practice physicians who are self-employed.

For the purposes of clarification, "employer" might be defined generally as one who engages the services of another person or persons for wages or salary, "employee" as one who works for wages or salary in the service of an employer and "employer-employee relationship" as the basis under which the employer compensates the employee for his work. Physicians who are truly employees usually work for wages or salaries. Their time is not their own. By the terms of their employment, they are required to perform the employer's work during specified hours. While so engaged, these physicians are furthering the business of their employer.

Physicians who are compensated on a salaried basis may, like any other employees, form a union for the purpose of dealing with their employers. Several examples may be cited of existing unions which represent physicians employed by hospitals or by such industries as the railroads. When this type of group negotiates for wages, it is called collective bargaining, is exempted from anti-trust action, and is legal.

However, the great majority of practicing physicians are defined as "self-employed" under the law. Deriving their income on a fee-for-service or capitation basis, they are independent contractors and as such are subject to anti-trust laws. The Clayton Act, for example, grants statutory immunities to unions of employees but does not exempt non-employee organizations. If a non-employee organization negotiates as a group for payment, it is called price fixing, and that is illegal.

Moreover, attorneys who have studied the question point out numerous legal decisions in which groups of essentially self-employed individuals were denied the immunities of union members. In one such case, in refusing to characterize the litigants as "employees," the U.S. Supreme Court pointed out that " . . . their desire is to continue to operate as independent businessmen, free from such controls as the employer might exercise."

The U. S. Supreme Court has made a similar observation regarding a physicians' organization — in this case the American Medical Association. The Court clearly distinguishes the physician members of AMA from "employees" and therefore rules them subject to Federal anti-trust laws:

"In truth, the petitioners represented physicians who desired that they and all others should practice independently on a fee-for-service basis where whatever arrangement for payment each had was a matter that lay between him and his patient in each individual case of service or treatment. The petitioners were not an association of employees in any proper sense of the term. They were an association of individual practitioners each exercising his calling as an independent unit."

The president of one "physicians' guild" is quoted by *Medical World News* as saying that because of the legal questions involved, his organization is not calling for the establishment of physicians' "unions" as such. "We are pushing for an organization capable of action in concert with and similar to the operation of unions, he said, adding that there is no reason why physicians cannot form associations that act like unions without calling themselves unions.

Here again, an important point might be raised: attorneys emphasize that the particular name chosen by such an organization makes no difference. It is the actions an organization takes that determine whether it is, in fact, a union.

The primary weapons in the arsenal of any trade union are activities which would quickly embroil any physicians' organization — whatever it chooses to call itself — in serious legal difficulties. Both criminal and civil prosecutions are possible under anti-trust laws. Criminal prosecutions can result in fines or imprisonment. Civil suits can lead to the award of damages — even treble damages — and highly restrictive injunctions. Furthermore, certain acts are held to be *per se* violations. Boycotting and pricefixing, essential tools for any trade union, are illegal if undertaken by anyone else. Trade union members, for example, can refuse to do business with those not meeting union terms . A concerted refusal to deal initiated by any other organization is a *per se* violation of anti-trust laws.

Other Questions Raised

Faced by encroaching and often unfair government controls, the prospect of collective bargaining — a successful tool for labor — naturally seems attractive to many physicians. However, today collective bargaining through any organized effort can only be effective if the bargainers are willing — and legally able — to utilize the weapons of strike or boycott, or both. Even disregarding legal considerations for a moment, several other important questions are raised regarding possible collective bargaining by physicians.

First, with whom would a physicians' union bargain? For any group of employees, the answer is simple: with the employer. But generally, physicians are not employees except to the extent that their patients might be seen as their "employers."

Would they bargain with government? While government certainly has become a major factor in medical care, the private sector has far from disappeared. Attempts at sweeping negotiations with government could easily act to encourage further government inroads into the medical care field. For physicians in private practice, there seems to be no counterpart to labor's "employer" with whom a physicians' union might bargain.

Next, against whom would a physicians' union strike (again ignoring legal considerations for a moment)? Against patients? Effective collective bargaining depends on muscle, and muscle would mean disregarding patient welfare to one degree or another. In this regard, even a strike against government, such as occurred in Quebec, essentially hurts the public rather than the politicians.

Obviously, the professional and ethical considerations of a strike by physicians are major considerations. The resort to striking — or withholding services or "collective non-practice" or any other euphemism for striking — is clearly in conflict with basic professional concepts. Certainly the majority of physicians recognize the public responsibilities of the profession and would find a strike unthinkable except in the most extreme desperation.

In 1970, CMA's position on this subject was clearly stated by its House of Delegates: "that the physicians of California have one major responsibility and duty: the provision of medical care of the highest quality to all persons. That the California Medical Association believes that abandonment of patients through a concerted denial of service by physicians (strike) is an unacceptable method of solving problems or differences . . . The CMA urges that methods be sought by all members of the health team, including those administrative and political agencies which use the services of health workers, to achieve their desired objectives in an equitable, professional manner, protective of the health of all, without resorting to denial of service."

Another factor in unionization, "deprofessionalization," also is an important concern. CMA President Jean F. Crum puts it this way, "From my view, unionizing the medical profession would bring with it, in addition to a great many other disadvantages, the important deterrent that we would forever forfeit our professional status and jeopardize the dignity of our profession."

What effects could the existence of a powerful "union" of physicians produce with individual patients or the public generally? In a democracy, every effective organization must recognize that public understanding and support are essential if its objectives are to be achieved. Even discounting the possibility of strikes by doctors, there might well be difficulty in avoiding public opposition to physicians who band together for purely economic reasons. The importance of public opinion must not be ignored.

However distasteful it might be, the possibility of a strike can never be totally or realistically discounted for any organization negotiating for economic goals. What would be the financial effect for a physician and his family of a prolonged strike? Trade unions use the instrument of a "strike fund" to carry their members through the period of lost income. However, such a concept would be very difficult to apply for such professionals as physicians.

Another point is the effect that a physicians' union ultimately might have on the type of practice prevalent in this country. Certainly the very basis of the union concept — negotiation between employer and employee — would seem to favor modes of practice in which physicians are employees and to discourage individual private practice. The result could well be a radical shift in type of practice.

Legal and Professional Considerations in a Nutshell

Unions are clearly defined under law and operate within a narrow framework. Employees (salary or wage earners) may unite to bargain collectively with their employers for improvement in the terms or conditions of their employment. In all cases, the relationship of employer-employee must be involved. It should also be noted that unions legally exercise considerable power over their memberships.

Any organization whose members are defined as self-employed does not fit the legal definition of a union. Therefore such an organization, whatever it calls itself, is not allowed the special statutory immunities granted trade unions and is not free to engage in collective bargaining. This is not to say that there is anything illegal in the formation of an organization for physicians in private practice which uses the name "union." However, attorneys point out that overwhelming legal problems will arise if the organization acts — or even threatens to act — like a union. In addition, the matter of collective bargaining raises significant professional questions.

In short — because of the numerous legal and professional considerations — a physicians' union would be limited to the same activities presently being done by organized medicine. Furthermore, the danger exists that such a union would suffer from many of the disadvantages of the trade union, without the advantages. The primary responsibility of physicians remains to provide medical care of the highest quality to all persons.

* * *

THE DELAWARE CONTROLLED SUBSTANCES ACT

The Delaware Controlled Substances Act, Title 16, Chapter 47 became effective January 2, 1973. Basically, the provisions of the Act are similar to the Federal Controlled Substances Act. The law places the responsibility for administration with the Secretary of the Department of Health and Social Services. The office of the Pharmaceutical Control Officer will be responsible for the enforcement of the Act under the supervision of the Secretary of the Division of Public Health. The highlights of the legislation are as follows:

Drugs Covered

The Schedules and drugs are now the same as the Federal Act. The Secretary may add drugs to the schedules as indicated in Section 1.

Rules

The Secretary may promulgate any regulations he deems necessary to control the manufacture, distribution, and dispensing of controlled substances in the State.

Registration

Every person who manufactures, distributes, or dispenses any controlled substance within this State or who proposes to engage in the manufacture, distribution, or dispensing of any controlled substances within this State must obtain, annually, a registration issued by the Secretary. No person can obtain a registration unless he is registered with the Bureau of Narcotics and Dangerous Drugs of the Federal Government. The suspension or revocation of his Federal registration will result in automatic suspension or revocation of his State registration. Practitioners who have more than one office but do not keep controlled substances or dispense them from each unit, need only register once. If dispensing takes place at each location, a separate registration for each is required.

Records

Records and inventories required by Federal legislation are required by this Act. Practitioners should pay special attention to Section #5. Pharmacists should pay special attention to Section #7. There will not be any State order forms required to obtain controlled substances.

Security

Security requirements are basically the same as the Federal requirements. However, Section #6 spells out minimum security regulations for practitioners and pharmacies.

Prescriptions

Prescription requirements concerning writing, dispensing, filling, and refilling are basically the same as the Federal requirements. Sections #3 and 4 cover exceptions.

Hypodermic Syringes and Needles

Section 4757 covers hypodermic syringes or needles. The Section states that a written order of a practitioner is required. It also states that a log must be kept outlining each transaction; entries must give the date of delivery, the name, age, and address of the purchaser, and a description of the instrument sold, disposed of, furnished, or given away.

Inspections

Administrative inspections can be conducted by agents designated by the Secretary. Administrative warrants to conduct the inspections can be obtained, however, they may be done without warrant if the registrant consents or under other provisions of Section 4767. Agents have the authority to inspect records, inventories, invoices, premises, etc. as outlined in Section 4767. They also have the right to confiscate inventories, records, etc. as outlined in Section 4769.

Violations

Reports of violations will be reviewed by the Pharmaceutical Control Officer. For violations of minor nature, the registrant will be asked to make corrections and a follow-up inspection will be done to make sure that the registrant has complied. The Secretary does have the right to hold hearings concerning suspension or revocation of registration and the authority to request the Attorney General's office to prosecute.

If anyone has any questions concerning the Uniformed Controlled Substancse Act, please contact either the office of the Secretary of the Division of Public Health or the Office of the Pharmaceutical Control Officer located in the Jesse S. Cooper Building, Dover, Delaware.

REGULATIONS GOVERNING UNIFORM CONTROLLED SUBSTANCES. ADOPTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND SOCIAL SERVICES, IN CONFORMANCE WITH SECTION 4731, TITLE 16, DELAWARE CODE, EFFECTIVE FEBRUARY 1, 1973.

Section 1. Addition, Deletion or Rescheduling of Substances

The Secretary of Health may add substances to or delete or reschedule all substances enumerated in the Schedules of the Controlled Substances Act. In determining whether to control a substance, the Secretary shall consider the following:

1) Its actual or relative potential for abuse;
2) Scientific evidence of its pharmacological effect, if known;
3) State of current scientific knowledge regarding the substance;
4) Its history and current pattern of abuse;
5) The scope, duration, and significance of abuse;
6) What, if any, risk there is to the public health;
7) Its psychic or physiological dependence liability; and
8) Whether the substance is an immediate precursor of a substance already controlled under this article.

After considering the above factors, the Secretary shall make findings with respect thereto and shall issue an order controlling the substance if he finds that the substance has a potential for abuse.

If the Secretary designates a substance as an immediate precursor, substances which are precursors of the controlled precursor shall not be subject to control solely because they are precursors of the controlled precursor.

If any substance is designated, rescheduled, or deleted as a controlled dangerous substance, under Federal law and notice thereof is given to the Secretary, the Secretary shall similarly control the substance under this act after the expiration of thirty (30) days from publication in the Federal Register of a final order designating a substance as a controlled dangerous substance or rescheduling or deleting a substance, unless within that thirty (30) day period, the Secretary objects to inclusion, rescheduling, or deletion. In that case, the Secretary shall cause to be published in daily newspapers throughout the State and in the journals of the professional organizations of the State, the reasons for his objection and shall afford all interested parties an opportunity to be heard. At the conclusion of any such hearing, the Secretary shall publish and make public his decision, which shall be final unless the substance is specifically otherwise dealt with by an act of the Legislature.

Upon publication of objection to inclusion or rescheduling under this act by the Secretary, control of such substance under this section shall automatically be stayed until such time as the Secretary makes public his final decision.

The Secretary of Health may by regulation exclude any non-narcotic substance from a schedule if such substance may, under the provisions of Federal or State law, be lawfully sold over the counter without a prescription, unless otherwise controlled pursuant to rules and regulations promulgated by the Department.

Section 2. Republication of Schedules

Republication of Schedules outlined in Section 4723 will be complied with by making available to the registrants and to others, copies of published Federal lists unless the drugs listed in the schedule of the State of Delaware Act differ from the Federal Classification. In such a case, only the differences will be published.

Section 3. Expiration of Prescription

Prescriptions for Controlled Substances in Schedule II and III will become void unless dispensed within seven (7) days of the original date on the prescription. Prescriptions cannot be written for more than 100 dosage units, nor can more than 100 dosage units be dispensed at one time.

Section 4. Mail Order Prescriptions

Mail Order Prescriptions — Before dispensing prescriptions for Schedule II, III, IV, and V drugs by mail, the pharmacy and or pharmacist is responsible to assure that the prescription is valid and written by a prescriber properly registered with the Bureau of Narcotics and Dangerous Drugs. Verification can either be made in writing or orally.

Section 5. Inspection of Records

When inspectors are doing accountability audits in the Offices of Physicians, Dentists, and Veterinarians, those registrants must either open their patient records to determine amounts of controlled substance dispensed, or he may keep a record listing the following items:

1) Date of Dispensing
2) Patient's Name
3) Name of Drug and Strength
4) Amount Dispensed
5) Name of Person Dispensing

Accountability audits in pharmacies will be done from the invoices and prescription files. In the case of wholesalers, distributors, and manufacturers, invoices of substances received and distributed will suffice. Records must be kept for a period of at least two (2) years.

Section 6. Minimum Security Regulations for Storage of Schedule II Controlled Substances for Practitioners

Practitioners must store Schedule II controlled substances in a money safe or a GSA class five graded or equivalent steel cabinet. The safe or cabinet, if it weighs less than 750 pounds, must be bolted or cemented to the wall in such a way that it cannot be readily removed. Other types of locked cabinets or drawers are acceptable provided that an effective alarm system is installed on the premises.

Section 7. Final Inventory

Whenever the pharmacist in charge of a pharmacy in the State of Delaware leaves his position, a complete inventory of all medications covered by the Controlled Substance Act of our State will be taken by the present and the new pharmacist and a copy sent to the Delaware State Board of Pharmacy and a copy retained on the premises for a period of two (2) years. The pharmacist in charge is the pharmacist registered with the State Board of Pharmacy, as the one who is responsible for the prescription department of the registrant.

Section 8. Registration, Revocation of Registration and Federal Regulations

(A) Registration — No one shall be registered to handle controlled substances within the State of Delaware who has not first obtained a registration approval from the Bureau of Narcotics and Dangerous Drugs.

(B) Revocation of registration by the Bureau of Narcotics and Dangerous Drugs of the Federal Government will result in automatic revocation of the State registration.

(C) Regulations promulgated for the Federal Comprehensive Drug Abuse Prevention and Control Act of 1970 will be adopted as part of the regulations for the Uniform Controlled Substances Act, Title 16, Subchapter 47, Delaware Code.

Section 9. Severability

If any provision of these regulations is held invalid, the invalidity does not affect other provisions of the regulations which can be given effect without the invalid provision or application, and to this end the provisions of the regulation are severable.

> It is because science is sure of nothing, that it is always advancing.
>
> *Duclaux*

Editorials

KENTUCKY COLONEL GEHRET SURRENDERS DELAWARE BOARD GAVEL[1]

Status of Dilators, Forceps and Curettes Not Reported

> The State Board of Medical Examiners and the Medical Council of Delaware pay special tribute to Dr. "Andy" Gehret for his inspired leadership and dedication to all activities, national and local. Dr. Gehret has served the Board and the Council well since March 1, 1956. His energy has kept our "noses to the grindstone," but his patient counsel has made our work easy. He has always been available when needed, easing the burden of busy Board and Council members.
>
> Andy, you will be missed by all . . . we all offer a heartfelt "Thank You!"

With the flourish and embellishment characterizing such citations, the Medical Council of Delaware and that state's board of medical examiners recently marked the retirement of Andrew M. Gehret, M.D. The official (unabridged) citation, including additional comments of personal rather than general interest, was presented to him at a dinner in his honor at Dover, Delaware October 3, 1972.

Dr. Gehret had been a member of the Delaware board less than three years when first elected to membership on the executive committee of the Federation of State Medical Boards during the 1959 business meeting.

One of what seems to have been an inordinately extended line of obstetricians and gynecologists to reach that office, Dr. Gehret became president of the Federation in February 1964.

During the years leading to the presidency, he served as member and chairman of a number of special committees of the Federation and for several terms as chairman of the Examination Institute Committee. It was during Gehret's chairmanship that the examination institutes functioned as sessions for the actual construction of questions for a "pool" that state licensing boards might use as a basis for examinations in certain subjects. Those meetings usually preceded the official opening of the annual meetings of the Federation.

Dr. Gehret was born in Reading, Pennsylvania and completed his education within the Keystone State. His baccalaureate degree was from Bucknell University (B.S. in biology) and his M.D. from Jefferson. Remaining in Philadelphia, he completed his internship and a period of residency at the Jefferson hospitals.

He was licensed to practice in Delaware about forty years ago, and has called Wilmington home since then. His practice was interrupted, as were so many, for World War II service, during which he was promoted to the rank of Lieutenant Colonel, Medical Corps, Army of the United States and became commanding officer of the 8th Field Hospital. Also, prior to returning to Wilmington, he completed additional training in his specialty at the University of Pennsylvania school of medicine.

A Diplomate of the American Board of Obstetrics and Gynecology, Dr. Gehret is a Fellow of the American College of Surgeons. He is a member of the Obstetrical Society of Delaware and many other professional organizations. He is an Honorary member of the Department of Obstetrics and Gynecology, Wilmington Medical Center. Andy's son, John, also a board certified obstetrician and gynecologist, recently joined him as an associate in the same department.

He was president of the Medical Society of Delaware for the 1965-1966 term. Another significant service to his profession was as a member of the board of trustees for the department of mental health of his state. Reports indicate that Dr. Gehret was responsible for many innovations in the field of mental health administration within the state, including the establishment of the mental health commissioner position.

Known widely throughout his area for untiring effort aimed at the " . . . betterment of medicine . . . " in Delaware, Dr. Gehret was commissioned a Kentucky Colonel by Governor Munn in 1968.

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[1] This editorial appeared, slightly modified, in the *Federation Bulletin* of the Federation of State Medical Boards, 59:7, p. 399, '72.

His retirement from the medical board and the medical council of Delaware deserves brief comment. The medical council is composed of the presiding judge of the superior court of the state, the president of the state board of medical examiners and a third member. The latter member is elected by the medical board from among the members of the Medical Society of Delaware, and may not be a member of the medical board. Each decision reached or ruling made by the board of medical examiners is subject to immediate review by the medical council. A unique system, indeed.

Thus, the Bulletin, speaking for the Federation, and in company with the physicians of his state, congratulates Andrew M. Gehret, M.D., applauding his earlier leadership in the Federation of State Medical Boards and his continued dedication to the *betterment of medicine* in Delaware.

On completion of his term as president of the Federation, he was eligible to receive the symbolic gavel. It seems reasonable to assume that he received a traditional decorative gavel upon the termination of his service as president of the Medical Society of Delaware. In exchange for the surrender of the gavel and/or gavels of the medical board and the medical council of Delaware, Kentucky Colonel Gehret's collection of fireplace mantleshelf trinkets and trophies doubtlessly increased.

Ray L. Casterline, M.D.*

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* Dr. Casterline is Editor of the *Federation Bulletin.*

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THE TEEN YEARS

The teen years constitute a never-never-land for medical care. Adults, in general, are felt to be mature enough to make important decisions concerning their health needs and care. Children generally are too immature to weigh these decisions logically. Adolescents, however, may be mature or immature emotionally, and they must be evaluated individually.

Delaware law states youth over 12 years of age may consent to treatment for venereal disease, other contagious diseases, and pregnancy. However, the law does not allow self consent for contraception, treatment of drug abuse, or acute problems in alienated or emancipated minors or in those whose parents are not immediately available.

Dr. Hofmann's article appears on page 35.

Therefore, at present, a sixteen-year-old girl can receive treatment for her pregnancy but will be denied all forms of contraception except vaginal foam because the prescription for birth control pills, insertion of an IUD, or fitting of a diaphragm requires a pelvic examination to which she cannot consent. If the same girl does have a baby, she may consent to medical care of the baby but still must have a parent or guardian sign for her medical care.

Recently we have been seeing more and more teenagers under 18 in Delaware who are either estranged from their families and working on their own, or going to various schools. Many times they seek medical care for acute but non-emergency type problems such as otitis, acne, orthopedic problems not involving a fracture, and exacerbation of chronic problems such as allergic rhinitis, arthritis, and follow-up of diabetes or kidney ailments. Even though many physicians treat them, the physicians are not truly acting within the sancitions of the law. A sixteen-year-old Spanish-speaking youngster was refused definitive treatment for Osgood-Schlatter disease because his parents in Puerto Rico could not be contacted. Certainly his orthopedic problem was not life-threatening, but good advice and possible steroid therapy could have saved the young man needless pain and inconvenience. Some centers encourage young people to lie about their age so that they can receive the medical crae they wisely sought.

Sensitive medical problems as defined by Dr. Hoffman in her article are treated primarily in specialty-type clinics in Delaware, such as Drug Abuse Clinic, Adolescent Clinic, and some Obstetric and Gynecologic Clinics, Mental Health Clinics, and Veneral Disease Clinics. In most cases the adolescent's confidence is not broken by informing the family without the patient's permission, although attempts are made to help the adolescent communicate with his family. Many adolescents, however, avoid appropriate medical treatment because they have "hassles" about their age with clinic personnel before receiving treatment.

It is time we adopt a more realistic approach to the care of the adolescent. Certainly a committee for treatment of adolescents, formed through the Medical Society of Delaware, could work with the Society's legislative committee to recommend alteration of the present state laws with the aim of giving better medical care within the scope of the law to this "very special age group."

Janet Kramer, M.D.

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A HEALTHIER SOCIETY?

Last year a group of Delaware physicians, lawyers, hospital administrators, and State representatives sat down together and hammered out legislation to clarify and broaden the areas in which minors might give their own consent for health care. This discussion resulted in House Bill 377, introduced and passed by the 126th General Assembly in 1971.

The major part of this legislation was devoted to clarification, by assembling previous law relating to the health care of minors under one heading in the Delaware Code. However, there were significant additions, namely, lowering the age of medical consent across the board from 21 to 18 years of age; allowing any minor parent to consent for the medical care of his or her child; and providing a clause to allow minors to consent for their own care, when such treatment, if withheld, would reasonably be expected to threaten the health or life of such minor. Legislation which passed the previous year, giving minors the right to consent for treatment of pregnancy and infectious disease, was left untouched.

The challenge posed by Dr. Adele Hofmann in her article published elsewhere in this Journal, presents problems to us, as physicians serving the youth in our State. We now have the tools to work with by our having passed enabling legislation. The Teen-Age Unit for inpatient care and the Adolescent Clinic at the Delaware Division are providing an appropriate setting for the education of Wilmington Medical Center interns and residents. The real stumbling block appears to be in "broad attitudinal changes" which are slow in coming, from both physicians and families, the ultimate benefactors of such health care.

Dr. Hofmann's article appears on page 35.

Part of the resistance stems from ignorance. Some physicians are unaware of the recently passed legislation and continue to fear the possibility of a law suit, in spite of reassuring data presented in this article that no cases have come to court anywhere in the country, regarding consent of minors, unless there has been an unfavorable outcome from treatment. Ignorance on the part of minors themselves plays a role. Many, perhaps most of them, are unaware of their rights regarding consent to medical care, and may continue to suffer from V.D., fear of pregnancy, or drug abuse, not knowing that medical help is within their reach, without fear of exposure to their parents or other authoritative figures, such as the police.

In addition, attitudes of our adult society prevail, in spite of legislation. Why is it that pregnancy tests are not being done by school nurses in most school districts, in spite of the fact that the Attorney General's opinion favors such tests being done? Why are girls who are pregnant still being denied admission to schools, in spite of the fact that the Department of Public Instruction has directed that they may remain in school until term, as long as they have their doctor's permission? Why are sex education and contraceptive information not available in most Delaware schools? It appears that, in spite of our laws and our legal opinions, the youth are still getting the short end of the stick. Their education and their rights are being denied, because of the fear of school administrators that parents aren't ready for the "new morality." Yet, it is the parents who vote for the legislators, who make the laws that give privileges to minors that parents are allegedly unwilling to accept. Or are they? I would like to see us implement to the fullest extent, the tools that an enlightened General Assembly has given to us. Let the doctors treat, the teachers educate, and the students learn, to the fullest extent of the law, and let the chips fall where they may. The end result could be a healthier society for the next generation.

M.J.M.

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VITAMIN D UPDATE

Vitamin D metabolism has been subjected to intensive investigation over the past several years. The exciting search for the active metabolite of vitamin D has indeed led to the elucidation of another important physiological function of the kidney and the source of the probable hormone that controls absorption of calcium via the intestinal mucosa.[1] The progress of our knowledge of calcium and phosphorus metabolism and the physiology of the parathyroid gland has been intertwined with that of the metabolism of vitamin D. It was early recognized that vitamin D was concerned with the absorption of calcium and phosphorus via the small intestine, and although both vitamin D and parathormone would elevate serum calcium, only vitamin D had significant antirachitic effects.

Vitamin D has long been in the therapeutic armamentarium of the pediatrician as a preventive measure of rickets, and in the early days of pediatrics as a specialty it was considered a tremendous step in the prevention of one of the major diseases of infancy. Although the curative value of cod liver oil for rickets had been known for centuries, our current knowledge of the disease and the chemistry of vitamin D dates back to around 1918.[2] In the interval until the present it has been learned that rickets can be produced in dogs by vitamin D-deficient diets, ultraviolet irradiation and sunlight have therapeutic effects, and foods can be irradiated and the sterol ergosterol thereby converted into the active fraction ergocalciferol or vitamin D_2. The antirachitic factor in cod liver oil has been separated from vitamin A, crystalline vitamin D_2 has been isolated by ultraviolet irradiation of ergosterol and named calciferol or vitamin D_2, and in 1936, vitamin D_3 or 7-dehydrocholesterol, was isolated and found to be present in the skin, becoming activated D_3 when the skin is exposed to the ultraviolet spectrum. Therapeutically the antirachitic vitamins, animal vitamin D_3 (activated 7-dehydrocholesterol or cholecalciferol) and plant vitamin D_2 (ergocalciferol) have primarily been used, by means of which vitamin D deficiency rickets has been almost completely eradicated. Any rickets currently seen is usually vitamin D-resistant or vitamin D-dependent rickets, or rickets associated with either liver or kidney disease. It is in relationship to these latter disorders, particularly renal disease, that significant progress has been made in our knowledge of the active metabolites of vitamin D. It has been demonstrated that there occurs, probably in the liver, hydroxylation at C-25 in the side chain of either vitamin D_2 or D_3 with the formation of 25-hydroxycholecalciferol (25-HCC).[3,4] For a period of time it was thought that 25-HCC was the active metabolite mediating intestinal transport of calcium. It was eventually shown that the 25-HCC was further hydroxylated by the kidney to 1,25-dihydroxycholecalciferol (1,25-DHCC)[5] before acting as a hormone on target tissue such as intestinal mucosa or bone. It is 1,25-DHCC that complexes with nuclear chromatin, and in the language of the molecular biologist, there is then activation of DNA mediated mRNA synthesis and induction of proteins that mediate the action of vitamin D in the transcellular movement of calcium and phosphorus. A major milestone was identification of the probable active metabolite of vitamin D as 1,25-DHCC.[1]

Clinical support for previously performed animal data[6,7] has now been supplied in a report[8] in which four patients with renal failure, one of whom had been nephrectomized, were treated with 1,25-DHCC. In all patients there was significant increase in calcium absorption with either improvement or correction of the calcium balance in contrast to the failure of cholecalciferol to achieve any benefit. These data would support the belief that the available 1,25-DHCC depended upon the amount of functioning kidney tissue and that a decrease in synthesis of 1,25-DHCC will lead to disturbances in calcium homeostasis and the production of rickets or osteomalacia. We will be awaiting with interest further information on the effects of 1,25-DHCC, not only in uremia and renal osteodystrophy, but also in rachitic states associated with liver disease and other disease entities such as vitamin D-resistant and vitamin D-dependent rickets.

H. R.

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PROPHYLACTIC ANTIBIOTIC THERAPY

The utilization of prophylactic antibiotic therapy in patients undergoing operative procedures is controversial. Practical and emotional factors influence adversaries on both sides of the question. There are reports in the literature that lend support to the use of antibiotic prophylaxis, but there is little objective evidence in controlled studies that such therapy has a significant effect on the incidence of postoperative infection. The false sense of security induced by antibiotic coverage could lessen the attention to aseptic technique.

Important factors that relate to postoperative infection include operative technique, duration of operation, and aseptic environment in the operating suite.

See Dr. Lennihan's article on page 31.

The dilemma is selection of the proper prophylactic agent, as no single antibiotic combination can inhibit all potential pathogens. It is possible to prevent infection with a single microorganism or even a group of microorganisms, and in this setting proper prophylaxis can be carried out. In all other situations antibiotic selection becomes guesswork, and the patient is at risk of infection with antibiotic-resistant opportunists.

This inability to predict the infecting organism is the major obstacle to proper antibiotic selection. During the epidemic of nosocomial staphylococcal infections a decade ago, we used prophylactic lincomycin in elderly patients undergoing hip surgery with some degree of success[1]. However, current opportunists such as *Serratia, Erwinia, Candida, and Torulopsis* defy easy prophylaxis.

Retrospective studies at the Wilmington Medical Center suggest that prophylactic antibiotics do not lower the postoperative infection rate in patients undergoing hysterectomy, herniorrhaphy, or uncomplicated appendectomy[2]. A more recent study reported in this issue suggests that in selective surgery prophylactic antibiotics do indeed lower the infection rate. However, a note of caution is necessary. Studies designed to evaluate the use of antibiotics in infection prevention must use a controlled, double-blind technique. Other variables such as the skill of the surgeon, duration of operation, and susceptibility of the host are impossible to control.

An important reminder for those utilizing prophylactic antibiotic therapy is that the duration of therapy has a direct relationship to the occurrence of nosocomical superinfection.

If the physician chooses to employ antibiotic prophylaxis in surgical patients, he must tailor the therapy to the microbiologic mileiu in his own institution. "What is being done elsewhere" will be of little value in selecting the makeup of the local antibactetrial umbrella. Marked differences are recognized in predominant organisms and antibiotic susceptibilities in various geographical locations.

The answer to this controversy must derive from controlled studies, not "tests by testimonial."

W. J. H.

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ON THE QUALITY OF LIFE

The recent decision of the Supreme Court to honor the privacy and right of women to obtain an abortion during the first trimester of pregnancy without having to go through legal channels represents a victory to many people. Women's lib is surely feeling victorious; those who fought fiercely for reform in Delaware over the past few years must feel very rewarded by this breakthrough; and women of all ages who have suffered the need to bear unwanted children must feel sympathetic toward their younger sisters who no longer will have to fulfill the burden of motherhood which they reluctantly have borne.

For some of us in the medical profession, this new liberation has very special meaning. As a medical student at Harvard, I attended a seminar on euthanasia. This was considered a very esoteric subject at the time, one which had not reached the public eye. Presently, it is one of deep concern to the public, as well as the medical profession, although the definition, as we knew it, "mercy killing," has changed with time. The change in definition and the increased interest in euthanasia have resulted from more sophisticated medical knowledge which permits life to be sustained for long periods by mechanical means, such as artificial respiration and heart stimulation. Other factors that have increased interest in this subject have been the problems of population explosion and the related problems of pollution and poverty.

The seminar on euthanasia that I attended addressed itself to none of these mundane aspects of the problem to physicians, but only the most lofty philosophical concerns. I was privileged to hear, and be swayed by the Dean of the Harvard Divinity School, Willard L. Sperry.[1] I cannot remember all his persuasive arguments, but at the time I was firmly convinced that my role as a physician was clearly defined to preserve life, under any circumstances. This simple rule was promptly stored into my personal armamentarium and, until recent years, has not been hard to follow as a pediatrician. However, with all the new advancements of scientific methods of sustaining life almost beyond death, with the increasing numbers of unplanned pregnancies and the subsequent births of unwanted children, and the frightening realization of the problems of overpopulation, one's firm conviction to sustain life under any circumstances is shaken.

What a welcome breath of freedom and release one feels with the announcement that, at last, women no longer have to bear unwanted children. This makes the physician's decision so much easier. Ideally, if the present court decision prevails, every baby that is born is a baby that is wanted, that has been previously planned and will be lovingly cared for by his parents. There will be exceptions, of course, for reasons of religion or ignorance, but hopefully these will be in the minority.

Fellow pediatricians, the hardest years are behind us! Let us all, once again, strive to maintain life, in all its dignity and worth, knowing that once again value has been placed on human existence ,and not just the right to live!

M. J. M.

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The methods of quackery are merely a theft from the most ancient phases of folk-medicine.

Sudhoff

President's Page

PSRO's*

Dear Doctors:

As you know, H.R. 1 made mandatory by law the formation of Professional Standards Review Organizations to police the cost and quality of health care for Medicare and Medicaid patients. PSRO's will have a dramatic impact on medical practice in Delaware and the nation. The Department of Health, Education and Welfare will designate PSRO's by January 1, 1974. Their task will be to set standards of medical care for an area and enforce them through the power of withholding federal reimbursement or fining the provider.

Your Board of Trustees has been struggling with the decision of making a recommendation for the PSRO for Delaware for two months. The Delaware Foundation for Medical Care and the Peer Review and Professional Evaluation Committee were asked to consider the problem and report to the Board of Trustees. On February 8 the issue was debated by the Board, and the decision was reached that the PSRO function be given to the Delaware Foundation for Medical Care. This does not mean that the Foundation has *carte blanche* to set up a PSRO. This does mean that it will study and report recommendations to the Board of Trustees of your State Medical Society for implementation of a PSRO. The Foundation will be doing a job we have given them to do. If we don't like the job they are doing, we will take it back from them. We will keep on top of the situation. As a matter of fact, the AMA Advisory Committee on Professional Standards Review has called for a moratorium on PSRO implementation because . . . there are no national guidelines for establishing PSRO's.

Your Board of Trustees has informed the Foundation that membership in the Foundation will not commit physicians to participate in any program that the Foundation may subsequently initiate. The Foundation will report back to the Board for approval of its recommendation for fulfilling this stipulation.

Your support, interest, patience, and suggestions are earnestly solicited.

Joseph A Elliott

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*Reprinted from the February 15, 1973 *Newsletter*.

Letters to the Editor

To the Editor:

My paper on Psychiatric Emergency Treatment presented at the Wilmington Medical Center Conference on March 14, 1972 and published in the Delaware Medical Journal, Volume 44, #11, November 1972 was intended to stimulate thought on the special nature of the authority of physicians; psychiatric emergency treatment as a special form of service for persons in crisis which embodies a key role for physicians with psychiatric knowledge and skills; the concept of a psychiatric emergency treatment team which includes the patient and significant others, which sets goals, assigns roles to individual team members, designates a team leader to serve the team, and thus aids in the achievement of the roles formulated in the treatment plan.

In this connection there were several points which I had hoped to make in which I apparently did not succeed if the editorial "Leadership Means Being in Charge" in the same issue of the *Delaware Medical Journal* is an accurate gauge.

The emphasis was on the role of "physicians with psychiatric knowledge and skills." If there was any "watering down" of the "expertise of the psychiatrist," it was relative to my attempt to emphasize his expertise primarily as a physician. If there was an intent to "make the team happy," it was to be achieved through removing restraints which prevented them from using their special skills as individual team members rather than through assigning functions inappropriate to their individual qualifications and skills.

Rather than watering down "the rights of the individual," the team concept as proposed was calculated to assure the right of the individual in crisis to "an immediate response by a physician with psychiatric competence to a call for help." Implicit is the fact that many calls for help relate to crises which can be resolved in part or not at all by medical services. The resolution of these crises may require services over which the physician would not wish to have command nevertheless his exercise of leadership "in terms of pointing the way to achievement of the team goals" could be crucial to the resolution of these crises. The physician would then be serving a leadership responsibility in the team to insist that goals for the resolution of these crises are established and that appropriate roles are assigned, but the actual decisions for the implementations of a treatment plan would be made by those who would be actually "in charge" of other human services.

For those who may have skimmed the article and missed two sentences in the middle of the article I would like to repeat them here. "In psychiatric emergency treatment the physician is *most often* the team leader. In other components of crises intervention persons other than physicians may more appropriately be the team leader."

V. Terrell Davis, M.D.

* * *

To the Editor:

Doctor Donald W. Cheff was the only doctor from Delaware killed in action during World War II.

After his death, the doctors of Delaware established an insurance policy for his son, Donald Theodore Cheff. The policy was to be used for higher education.

That policy was, in fact, used to help send me through Columbia University Graduate School of Business. I received my MBA there in 1963. On my recent promotion to Vice President of Chemical Bank in New York, I thought back to the importance a fine education meant to my success. And, I thought back to the thoughtfulness, compassion, and foresight of those doctors in Delaware who helped provide me with an important part of that education.

To those doctors of Delaware, thank you.

Theodore Cheff Krismann

* * *

To the Editor:

It has come to the attention of the Delaware Chapter of the Arthritis Foundation that many physicians have been asked to place the literature of a group called Arthritics and Friends United in their offices. Some physicians have also been asked to make contributions to this group.

We would like to alert physicians to the fact that Arthritics and Friends United is not related to the Arthritis Foundation, and to the best of our knowledge at this time, they have no program to benefit persons suffering from arthritis.

Their paid solicitors claim to be raising money for research, but we have no evidence that they are engaged in research. The man who directs Arthritics and Friends United identifies himself as Dr. Glen Shafer, but he is not a medical doctor. Their literature says that Dr. David Messinger is the Chairman of their Board, and he is the only physician that we know of who is working with them.

The Delaware Chapter of the Arthritis Foundation will be glad to discuss its program of education, research, and patient services with anyone who will call our Wilmington office at 655-2286.

Dr. Russell Labowitz serves as Chairman of our Medical and Scientific Committee, which includes Doctors S. Ward Casscells, I. Favel Chavin, Anthony Cucuzzella, Richard D'Alonzo, William Hall, Ellis Kendle, and Wai Wor Phoon; Mrs. Sharyn Baldwin, R.N. and Mrs. Naomi Goldstein, O.T.

MRS. M. LLOYD DAVIS
Executive Director

* * *

Landenberg Line
R. DOUGLAS SANDERS, M.D.

Physicians are invited to send the Journal photographs of their art work: brush, camera, pen, chisel.

Book Reviews

THREE PAPERBACKS

1. **INTERPRETATION OF DIAGNOSTIC TESTS: A HANDBOOK SYNOPSIS OF LABORATORY MEDICINE** by **Jacques Wallach, M.D.** Little, Brown, and Company, Boston. Price $6.95.

2. **MANUAL OF MEDICAL THERAPEUTICS**, 20th Edition, Department of Medicine, Washington University School of Medicine, edited by **Michael Rosenfeld, M.D.**, Little, Brown, and Company, Boston. Price $7.50.

3. **ENDOCRINOLOGY CASE STUDIES** by **Ernest L. Mazzaferri, M.D.** and **Thomas G. Skillman, M.D.** Medical Examination Publishing Company, Inc., New York. 398 pp. Price $10.00.

The paperback format of the first two of these books is vital to their purpose. Peek into the little black bags or bulging side pockets of first year house officers and one is very apt to see Diagnostic Tests (the red one) and especially the Washington University Manual (the blue one).

Wallach is a pathologist. On a page entitled "Acknowledgments" he thanks his colleagues whose "laboratory questions and clinical needs" apparently stimulated him to assemble—a better term than to write—this book. My main criticism of his effort is that it is not really an *interpretation* of laboratory tests, for that is a matter of clinical judgment and often involves deciding which tests to ignore. Rather, it is a compendium of which tests are reasonable to order in which clinical situation and, vice versa, what diseases may be associated with a given laboratory abnormality. The acknowledgment page, for reasons not at all clear to me, also contains this haiku:

> "Ah if my brush could only catch the faint scent of the white plum-blossoms that I paint."

If I understand this bit of somewhat inscrutable Japanese whimsy, the poet/artist is lamenting the imprecision, the incompleteness, of his painted plum-blossoms—a valid criticism, but why would Wallach so demean his own effort?

I spotted a few errors (example: the percentage of positive Barr bodies in female leukocytes is given as 3%—over 20% is correct) and a few surprises (chronic anemia of less than 7 gm is given as an etiology for systolic hypertension). But I was also impressed by its inclusion of relatively new material (example: the multiple laboratory abnormalities directly associated with or attendant upon the complications of heroin addiction). I cannot personally see much use for this book for the experienced physician, but since it is a favorite of doctors in training it is worth at least a look-see by those who daily associate with doctors who are using it.

The Washington University *Manual of Medical Therapeutics* may be an important reason why house officers in a time of youthful sartorial rebellion, still willingly wear classic short white jackets: the capacious side pockets are big enough to handle this book if it is rolled just a bit. The numerous editions (this is the 20th) attest to the attention paid to keeping this manual up-to-date. The manual gives hospital-based doctors those useful bits of information which are hard to learn until one needs them with frequency: the regimen for anticoagulation with heparin, the doses and duration of actions of the hypoglycemics, the treatment of ingestion of excess iron tablets, etc. This is not a manual for technicians, but for physicians, which undoubtedly is why it is so popular. For example, the known mechanisms of antimicrobial agents are included along with the indications and dosages; reasons for failure to respond to antibiotic therapy are also included, as well as common interfering agents. Important or controversial topics are often referenced to recent key papers in the literature. For doctors who wish to carry on their person a compendium for quick review, this book can be recommended highly.

Whereas the first two books are predominantly general in scope, the third, and most expensive of the three paperbacks, is specialized. "A compilation of 62 case histories representing clinical endocrinologic syndromes" (the subtitle), the patients (both rare and ordinary) represent a rather full clinical endocrinologic gamut. Each case presentation is followed by questions regarding diagnosis, therapy, etiology. The book is neither a textbook nor a book which can be read through. I have but few criticisms of the format; it seems to me a nifty way to review the subject matter, a kind of clinical self-assessment. The quality of the x-ray reproductions is poor, perhaps because of the fact that non-gloss paper is used as is to be expected in a paperback, even one this expensive.

Since each case is discussed in detail and the discussion referenced with a very up-to-date bibliography, the cases presented serve as introduction to a general and comprehensive discussion of the disease in question. This format has advantages and disadvantages. All the patients with hypercalcemia are presented in sequence; if case number 27 represents metastatic malignancy, then the reader may be quite sure that case number 28, also hypercalcemic, does not. This has the advantage that each section represents a comprehensive entity: the pancreas, the thyroid, the parathyroid. However, the reader is much less able to test his own acumen, and I think since most of the readers of a book like this one will be clinicians rather than students, it would have been better to present the cases in a totally random fashion, with an index by topic serving to pull together lists of all the cases relating to one endocrine gland for those who wish to review the spectrum of thyroid disease rather than to test their own astuteness, given one patient's history, physical and laboratory examinations.

But I do not mean to imply that this would not be a useful text for students; on the contrary by presenting a full range of patients with endocrine problems, it seems to me to be a very useful exercise for students past their preclinical years as well as for practicing physicians. The non-endocrinologist will read it for education and enjoyment; the endocrinologist will read it to see if he agrees with the presentations and discussion, and, in general, I think he will. Since the book can hardly be read through, its lightweight format makes it ideal for the bedside table. Three cases before bedtime, and lights out.

Bernadine Z. Paulshock, M.D.

PATIENTS, PHYSICIANS AND ILLNESS, A SOURCEBOOK IN BEHAVIORAL SCIENCE AND HEALTH, edited by **E. Gartley Jaco,** 2nd edition, The Free Press, New York, 413 pp. Price $12.95.

This is the second edition of a classic book which first appeared in 1958. It has been completely revised and contains only two articles that were found in the first edition.

The publication consists of a large series of essays from sociological and behavioral journals arranged in a systematic fashion to stress varied aspects of social medicine. The book is divided into three parts. The first section deals with the existence of disease in society and how the social condition of the individual influences the pattern of morbidity and mortality.

The second section deals with doctor-patient relationships such as sick-role and the patient's role, and the community responses.

The third section deals with total health care system proposals for change and the current issues concerning community management of health care services. A study of this book is highly recommended for health personnel in the position of making decisions involving projected community health care needs.

Allen C. Wooden, M.D.

MEDICAL AMERICA IN THE NINETEENTH CENTURY: READINGS FROM THE LITERATURE, edited by **Gert H. Brieger,** The Johns Hopkins Press, 1972, $12.50.

This book is not just an anthology. It is edited in such a way that it gives the reader a concise, interesting, and comprehensive view of the development of medicine throughout the nineteenth century. It depicts some of the deplorable aspects of the so-called heroic age of medicine, highlighting the abyssmal ignorance of anything approaching scientific medicine before the advent of bacteriology, in gleaming contrast with other disciplines such as physics, philosophy, art, and literature.

Many of the thirty selected papers are well written and most informative. Some are a little tedious. Fortunately the editor before each paper has in a short note set the stage and given a short biographical sketch of each author. The list of the authors is too long to repeat here, but Oliver Wendell Holmes, Benjamin Rush, Jacob Bigelow, Austin Flint, Samuel D. Gross, S. Wier Mitchell, and William H. Welch might be mentioned.

Some of the topics discussed are the surgical principles advocated by Samuel D. Gross (1874) and his diatribe against the horrible, disease-producing, filthy living conditions in large urban areas; the recognition of self-limited diseases by Jacob Bigelow (1835); the unfortunately inadequate system of medical education, or the lack of it, discussed by F. Campbell Stewart (1847); and Austin Flint's appeal (1863) for conservative medicine and more rational surgery. Of particular interest in the light of today's concern about pollution is Stephen Smith's report (1865) entitled "New York the Unclean."

This is an interesting, accurate book on medical history, pertinent to many of the problems we have today.

Lewis B. Flinn, M.D.

THE INNOCENT MURMUR: A PROBLEM IN CLINICAL PRACTICE by **Cesar A. Caceres, M.D.** and **Lowell W. Perry, M.D.**, Little, Brown, and Company, Boston, Mass., 1967, 300 pp. Price $15.50.

The editors of this unique text attempt an extensive evaluation of the normal heart sounds and murmurs of the healthy heart. The book is introduced by several chapters on the history of innocent murmurs. This is followed by principles of auscultation and the techniques of phono-cardiography. Wide variation in murmur interpretation, even by trained cardiologists, illustrates a need for objective techniques in sound measurement, but a chapter on innocent murmurs and cardio-vascular acoustics clearly indicates the present limitations of automatic identification of murmurs by instrumentation.

An extensive analysis of the definition of the "innocent murmur" occupies an entire chapter. This critique by an expert panel of discussants, aside from a philosophic difference of opinion, adds little to the statement that a functional murmur is a murmur heard in the absence of heart disease.

The remaining chapters deal with the clinical range of innocent murmurs and their differential diagnosis. The use of pharmacologic agents such as amylnitrate in murmur evaluation at the bedside is briefly reviewed. Stils murmur, the innocent pulmonic systolic murmur, the cardio-respiratory murmur, venus hums, murmurs of pregnancy, and the late systolic murmur are individually characterized.

Each chapter has an extensive analysis by several discussants as well as a concise summary. The late systolic murmur is treated as a controverial issue. It certainly cannot be treated as an innocent murmur and presents a diagnostic enigma requiring a complete cardio-vascular evaluation in selected cases. Miscellaneous sounds including the zypho-sternal crunch and cephalic bruits are briefly mentioned.

The text, despite a certain laxity of editing, accomplishes its major purpose. The illustrations and bibliographies are complete. An accompanying sound tract on tape or record would have been a unique, valuable asset; Beethoven may have been able to "hear" a pictured murmur, but the usual student still learns best at the bedside.

Dr. Caceres ended the meeting from which the book was produced with the question, "What is an innocent murmur? And does anyone have a definition suitable for a computer that will be acceptable for all?" No one did.

The book is recommended for student, clinician, and cardiologist as a unique cardiology text on a difficult problem.

Mark G. Cohen, M.D.

In Brief

Speakers on "Ask The Doctor"

Speakers for March, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: March 6, Gustave K. Berger, M.D., *Drugs and Hypertension;* March 13, Neil A. DeLeeuw, M.D., *Face Lifts;* March 20, Richard F. Brams, M.D., *Spring Allergies;* March 27, Donald Schetman, M.D., *Skin Tumors.*

AMA Physicians' Recognition Award

More Delaware Physicians who received the 1972 Physician's Recognition Award are *Herbert M. Baganz, M.D., Ronald L. Domingo, M.D., Marvin H. Dorph, M.D., John T. Hogan, M.D., Ivan Law, M.D., Jules S. Levin, M.D., Ethel F. Platt, M.D., David Platt, M.D.,* and *Charles R. Rickards, M.D.* of Wilmington; *Charles P. Lisa, M.D., Anthony M. Padula, M.D., A. Yvonne Russell, M.D.,* and *Michael R. Tesoro, M.D.,* of Dover; *Rudolph H. Beckert, M.D.* of Bridgeville; *Karl A. Semlak, M.D.* of Newark; and *Salvador A. Gallardo, M.D.* of New Castle. (See November *In Brief* for others.)

In The News

Winder L. Porter, M.D. has announced his retirement as Director of the Division of Public Health's venereal disease control program, State of Delaware. Dr. Porter has been employed by the state for 31 years—longer than any other physician with the Division.

Nurses' Fees Increased

The Board of Directors of the Delaware Nurses' Association has announced that the eight-hour fee for the Private Duty R.N. is $40.00 and the L.P.N. is $30.00 as of January 15, 1973. This has been approved by the Price Stabilization Board.

American Host Program Seeks Host Families

The American Host Program is a non-profit program to enable teachers from Europe to gain a realistic and truthful understanding of American life. They are looking for families to act as host to a visiting teacher for one or two weeks between July 6 and September 3, 1973. Duties as host are to provide room and board for the guest and an opportunity to meet other Americans. As an American Host family you open the door not only to your home but to better international understanding to your European visitors. Your responsibility is great—but your duty is a pleasure and your rewards are many. For more information and application forms contact Don and Joan Zook, Community Representatives, American Host Program, 215 South Ford Avenue, Wilmington, Delaware, 19805 or call 656-4240.

100 Physicians Needed in 1973

The Agency for International Development (AID) has requested the American Medical Association to continue the administration of the Volunteer Physicians for Viet Nam (VPVN) program. 743 physicians have served 940 tours since the inception of the VPVN program in 1965. Approximately 100 volunteers will be required in fiscal year 1973. How about you? William A. Wright, M.D., of Delaware, served a volunteer tour of duty under this program. For more information write: Program Director, Volunteer Physicians for Vietnam, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610.

FIND '72 Health Careers

The AMA is serving as a clearinghouse for students seeking financial assistance to help them train for careers in medicine and allied fields. The two-phase public service program known as FIND (Financial Information National Directory) is being conducted with the full cooperation of health professions organizations, governmental agencies, schools, and private organizations. More than 1,000 sources of financial aid are listed in the directory, *FIND '72-Health Careers.* Copies, $2.95 each, are available from Order Dept., AMA. The program also includes a computer search service that matches a student's needs and qualifications with current sources of funds. Write FIND, AMA, 535 North Dearborn Street, Chicago, Illinois, 60610, for information.

CLINICAL NOTICES AND MEETINGS

Oto-Ophthalmological Meeting

The annual Conference of the British Columbia Oto-Ophthalmological Society will be held May 4-5, 1973 at the Hotel Vancouver, Vancouver, B.C. For more information, contact D. A. Gillanders, M.D., Conference Chairman, 165 East 15th Street, North Vancouver, B.C.

Courses in Cardiology

The American Heart Association Council on Clinical Cardiology is sponsoring a three-day course on "The Collection and Interpretation of a Cardiovascular Data Base," May 7-9, 1973 at the Royal Coach Motor Hotel, Atlanta, Georgia. For information write to: George E. Stewart, Jr., American Heart Association, 44 East 23rd Street, New York, New York, 10010.

Maryland Annual Meeting

The 175th Annual Meeting of the Medical and Chirurgical Faculty of Maryland is scheduled for April 25-27, 1973 at the Baltimore Civic Center. A detailed program and reservation form will be sent upon request. Write to: John Sargeant, Executive Director, Medical and Chirurgical Faculty of the State of Maryland, 1211 Cathedral Street, Baltimore, Maryland, 21201.

New Jersey Annual Meeting

The 207th Annual Meeting of the Medical Society of New Jersey will be held in Haddon Hall, Atlantic City, May 12-14, 1973. For more information, write to: Mrs. Marion R. Walton, Convention Manager, The Medical Society of New Jersey, P.O. Box 904, Trenton, New Jersey, 08605.

Surgeons' Spring Meeting

The American College of Surgeons will sponsor its first annual four-day Spring Meeting in New York, April 1-4, 1973 at the Americana and Hilton Hotels. Eight postgraduate courses will be offered. Housing and registration forms are available from the American College of Surgeons, 55 East Erie Street, Chicago, Illinois, 60611.

Pathologists' Continuing Education

The New York State Society of Pathologists' Fourth Annual Continuing Education Institute will be held at the Biltmore Hotel, New York City, April 27-29, 1973. The meeting is dedicated to the late Paul Klemperer, M.D., and papers of prominent students of Dr. Klemperer will be presented during part of the meeting. Write to: Office of Program Chairman, New York State Society of Pathologists, 445 Tremont Street, North Tonawanda, New York, 14120.

AMA Congress on Medical Ethics

The American Medical Association announces the Fourth National Congress on Medical Ethics, April 26-28, 1973 at the Washington Hilton, Washington, D.C. Among the subjects to be discussed will be: What Is Medical Ethics; How Does the Student or the Resident or the Nurse See Medical Ethics; The Teaching of Medical Ethics; Medical Ethics and the New Biology. For more information contact: American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610.

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LAPAROSCOPY

A Review of 325 Consecutive Private Cases

Laparoscopy has revolutionized operative gynecology. The historical background and the genesis of this new technique in Delaware are documented in a personal consecutive series of 325 cases. The rapid and safe method of female sterilization as well as a procedure for certain types of intra-abdominal surgery and diagnosis is now available on an outpatient basis. Constant attention must be focused upon innovative techniques in medicine, such as laparoscopy, which effectively decrease hospital bed utilization while still offering quality medical care at marked reduction in cost.

JOHN M. LEVINSON, M.D.

Laparoscopy, formerly known as paritoneoscopy, was born in 1901, when Kelling, a Dresden surgeon, inserted a cystoscope into the abdomen of a living dog and viewed the viscera.[1] In 1911 Benheim, an American, described the procedure in two patients.[2] Over the next decade papers began to appear on the subject from Europe, Asia, and South America.[1,3–14]

Any review of endoscopic techniques makes one aware of medical dependence upon advances in the field of optics. Distal bulb illumination with the incandescent lamp produced a very real morbidity and mortality due to heat damage to tissues. In 1941 Brubaker and Holinger projected light from a proximally located magnesium flash lamp through an open tube to its distal end.[15] This was the first successful utilization of proximal illumination of the endoscope. Fourestier, Gladu, and Vulmiere refined the technique by replacing the distal light system with a quartz rod light carrier, thus allowing use of a more intense light which allowed for the use of cinematography and television.[16] In 1952 Hopkins and Kapany utilized a fiber optic glass bundle in development of a fibergastroscope. The present applications of the fiber optic glass bundle in endoscopy are based upon the phenomenon of internal reflectance and include not only light conveyance but also image conveyance.[17]

In 1928 Kalk designed a laparoscope with a 135° forward view of the abdominal cavity. In the 1930's Ruddock incorporated biopsy instruments into the laparoscope and documented one of the largest personal series of

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Dr. Levinson is a Senior in the Department of Obstetrics and Gynecology, Wilmington Medical Center, Attending Chief, Department of Obstetrics and Gynecology, St. Francis Hospital and Assistant Professor, Department of Obstetrics and Gynecology, Jefferson Medical College.

cases in the world.[18–21]

The constant input of new ideas coupled with the advances in optics, illumination, and instrumentation has led to the development of the modern fiber optic laparoscope. The Ruddock fiber optic laparoscope (American Cystoscope Makers, Inc., New York) embraces this new technology. The instrument is 10 mm in diameter and has a 180° viewing angle. The effective length of the laparoscope is over 25 centimeters and can be utilized with the standard A.C.M.I. fiber optic light box supplying a 150 watt concentrated light source. For photolaparoscopy a 1000 watt source is available. The Wisap CO_2 pneu insufflator (A.C.M.I., *Eder*) permits careful monitoring of the rate of flow of CO_2 used for inflation, as well as the volume of gas used, and the pressure obtained. In addition to the equipment for observation, a variety of instruments for biopsy, coagulation, aspiration, and manipulation can be passed through a separate cannula.

Later in the series, the operating laparoscope (Richard Wolf Medical Instruments, Chicago, Illinois) was utilized. This instrument can be employed using the same pneu-CO_2 insufflator and light sources and has the distinct advantage of requiring only one incision, which decreases operating time and facilitates the use of local anesthesia.

It is the purpose of this paper to evaluate a consecutive series of 325 cases of laparoscopy performed at the Wilmington Medical Center and St. Francis Hospital, Wilmington, Delaware from March 15, 1971 through August 31, 1972. New indications for the technique are presented and limitations noted.

TABLE 1

Diagnostic Indications for Laparoscopy

Infertility study with tubal patency test
Suspected endometriosis
Unexplained acute or chronic pelvic pain
Amenorrhea
Assessment of pelvic inflammatory disease
Assessment of small masses in early pregnancy
Tuberculosis suspect
Ascites or hemotoperitoneum — study of abdomen and fluid removed
Visual and biopsy study of abnormal liver
Evaluate pelvic malignancy:
    (a) staging cervical cancer
    (b) "second look" ovarian cancer
Biopsy pelvic organs
Ectopic pregnancy suspect
Differential diagnosis in appendicitis
Aspiration of unilocular simple ovarian cyst
Peritoneal fluid for study and culture
Assessment of uterine rupture after D & C
Pelvic node study after dye injected
Extended post coital test
Study of congenital anomalies and endocrinopathies involving internal genitalia
Determining extent of damage in penetrating and non-penetrating abdominal wounds

TABLE 2

THERAPEUTIC INDICATIONS FOR LAPAROSCOPY

Sterilization by bilateral partial salpingectomy (B.P.S.)
Lysis of adhesions
Cautery of endometriosis
Uterine suspension
Removal of intra-abdominal intrauterine device (IUD)
Removal of Mulligan hoods after tuboplasty
Uterosacral ligament denervation
Aspiration of simple unilocular ovarian cyst

Patient Selection

Contraindications are few: severe advanced cardiopulmonary disease, intestinal obstruction, generalized peritonitis, advanced abdominol carcinomatosis with adhesions, and massive obesity. In this study series, 322 patients were women and 3 men; their ages ranged from 18 to 75 years. One patient who was five feet tall and weighed 275 pounds was not considered a candidate for laparoscopy with bilateral partial salpingectomy (B.P.S.) as it was felt that instrumentation through the massive panniculus would have been too hazardous, if not impossible. Two male patients (ages 41 and 75) were considerd too ill for needed diagnostic laparotomy, but diagnostic laparoscopy was uneventfully accomplished under local anesthesia. Indications are stated in Tables 1 and 2.

Patient Preparation

A careful explanation was given of the technique to all patients prior to surgery. The first 60 patients were admitted the morning of surgery, having had nothing by mouth for a minimum of six hours preoperatively. The usual history, physical examination, routine blood counts and urinalyses were performed. Preoperative medication varied but usually consisted of propiomazine hydrochloride (Largon-*Wyeth*) 20 mg and atropine sulfate 0.4 mg. No abdominal shaving was done. Following the succesful experience with the first 60 patients, all subsequent cases have been done on an outpatient basis with the exception of critically ill patients requiring diagnostic study, or those requiring major procedures following diagnostic laparoscopy.

Anesthesia

Adequate anesthesia may be induced using local anesthesia, local anesthesia with systemic analgesia, various "block" techniques, or various techniques of general anesthesia with or without endotracheal intubation. Special anesthesia hazards exist because of the use of CO_2 for the pneumoperitoneum and because of operating with the patient in the Trendelenberg position, but with adequate understanding of the involved physiology effective anesthesia can be safely accomplished.[22]

In the early part of the study group various modalities of general anesthesia were used, often with endotracheal intubation. With increasing experience on the part of both the anesthesia department and the operator, the need for intubation has been largely eliminated. Fentanyl (Sublimaze-*McNeil* or Innovar-*McNeil*), a neuroleptanalgesic, has proved a useful adjunct. Patients have a much more rapid postoperative recovery.

Two critically ill men who required diagnostic laparoscopy and laparoscopic liver biopsy did very well with Sublimaze and a periumbilical block with a 1% lidocaine. Two patients for laparoscopic sterilization were successfully operated on with this same technique.

Since employing the operating laparoscope (one hole technique) 26 patients were done as follows: Preoperatively meperidine hydrochoride (Demerol-*Winthrop*) 50 mg and diazepam (Valium-*Roche*) 10 mg given intravenously over a two minute period for analgesia. The patient was transferred to the operating table, positioned, and prepared for surgery. Each step of the procedure was then carefully explained, and a periumbilical field block with 25 cc of 1% lidocaine provided anesthesia. Transient discomfort was noted when the fallopian tubes were coagulated. Most all patients were amnesic for this part of the procedure because of the preoperative diazepam. By utilizing the technique described, patients were ready for discharge one hour postoperatively.

Sterilization under local anesthesia, requiring only a several hour hospital stay and with the patient being able to return to work the next day, is now a reality! That the technique can be taught rapidly and performed successfully in an outpatient setting in lesser developed countries has already been proven. Such activity is being expanded by Wheeless[23] and Aid for International Medicine, Inc.[24]

Surgical Technique

The patient is placed in the dorsal lithotomy position and draped after being properly anesthetized. The abdomen and perineum are prepared with providone-iodine (Betadine-*Purdue-Frederick*); the bladder emptied by catheterization and careful bimanual examination followed by attachment of a double-toothed tenaculum on the cervix and a tubal insufflation cannula in the cervical canal. A tiny stab wound is made at the inferior border of the umbilicus, through which a Verres cannula is inserted into the peritoneal cavity. Two to three liters of CO_2 are introduced, being monitored by the Wisap "CO_2 Pneu-Automatic" insufflator. The needle is withdrawn. The patient is placed in 15° Trendelenberg position and the incision extended to one centimeter size in the transverse direction through which the laparoscopic trocar and cannula are inserted. After proper abdominal entry, the trocar is withdrawn and replaced with the fiber optic laparoscope. With the examiner manipulating the intrauterine cannula, the pelvic organs can be readily observed. To test for tubal patency, a methylene blue solution is passed through the intrauterine cannula. Direct observation of tubal patency is apparent, enabling a far better assessment than with radiological hystero-salpingography. If intra-abdominal surgery, biopsies, or fluid aspiration is required, a second trocar with a cannula are inserted under direct laparoscopic vision through a 5 mm transverse midline incision three to four inches below the initial incision. Through the latter incision and cannula the electrical cutting forceps or aspiration probe is passed and used. (Figures 1 and 2)

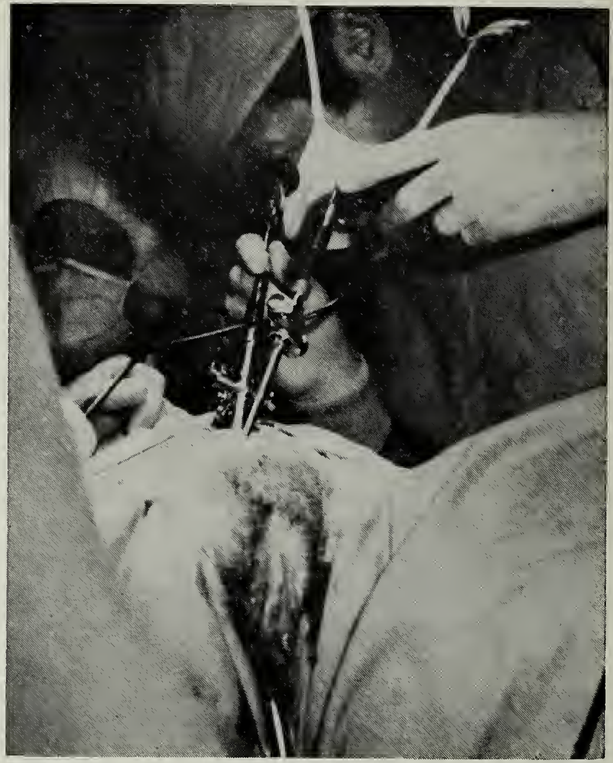
FIGURE 1. The author performing a laparoscopy.

Early in the study, it became apparent that by simple manipulation of the laparoscope the operator could often see the appendix, much of the small and large bowel, the anterior and lateral peritoneal surfaces, much of the liver, the stomach, and often portions of the spleen. If ascites were present, a reverse Trendelenberg position was needed for upper abdominal visualization. The position of the second trocar and cannula was altered to several inches below and to the right of the umbilicus if liver biopsy was to be performed. Laparoscopic liver biopsies afford more tissue for laboratory

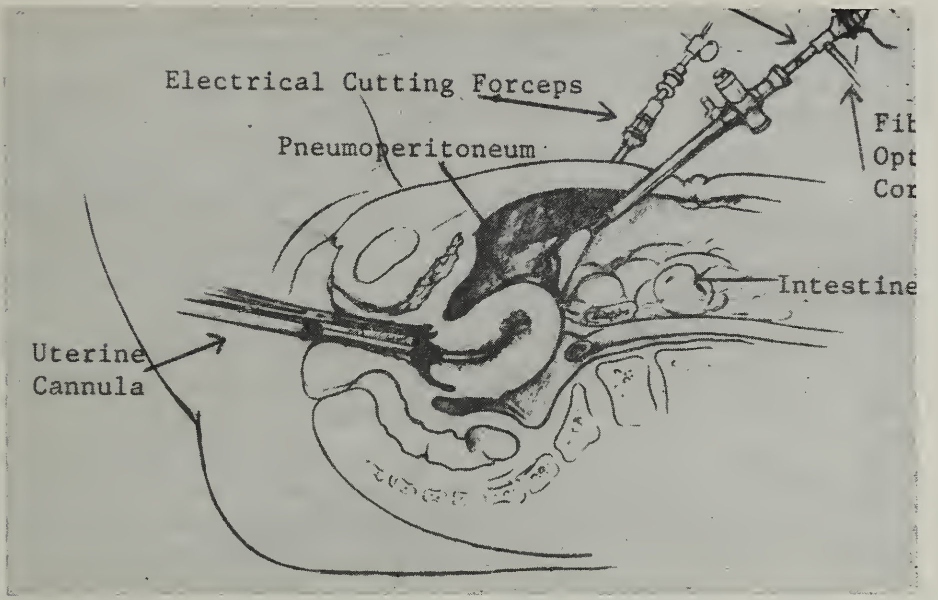

FIGURE 2. Sagittal section, diagrammatic of laparoscopy technique.

study than conventional blind percutaneous liver biopsies, and hemorrhage has not been a problem.

In the latter part of the series, 68 cases were done with the Wolf-Eder operating laparoscope. The one-hole technique markedly reduces operating time and facilitates use of local anesthesia.

The procedure is terminated by emptying the insufflated CO_2 through the cannula, removal of all instruments, and the placement of several 000 plain subcuticular sutures to close the wounds. Band-aids are applied to the wounds. Operating time in simple cases is under 15 minutes.

Post-surgical care

The initial 60 patients were discharged the day following surgery. Subsequent patients have been discharged one to four hours postoperatively and most have not needed analgesics. Patients have been encouraged to resume full activity the day following surgery. Sexual intercourse can be resumed within several days. Coitus was interdicted only where D & C, therapeutic abortion, or vulvovaginal surgery had been performed immediately prior to laparoscopy. Routinely, patients were seen in the office two weeks postoperatively.

Complications

The first patient in the series required two days' hospitalization because of severe referred shoulder pain secondary to diaphragic irritation from intra-abdominal bleeding and unabsorbed CO_2. Occasionally patients have complained of such discomfort for one to three days but have always responded to rest and propoxyphene hydrochloride, aspirin, phenacetin, and caffeine (Darvon Compound-*Lilly*). Four outpatients were sufficiently lethargic from general anesthesia to require over-night hospitalization.

Intra-abdominal bleeding has always responded either to electrical coagulation of bleeding points or to direct pressure of the abdomen over a bleeding point as in the liver biopsies and in one case where the inferior vena cava received a several mm laceration. Small ecchymotic areas in the omentum or near wound puncture sites have posed no problems. Obviously, meticulous care in passing and using all instruments is necessary. Puncture of a distended vein in the abdominal wall,[25–28] of an omental vein,[26] of an epigastric artery,[29] and even of the aorta[30] has been reported. Puncture injury to a distended stomach or bowel is another potential threat.

The risk of misplacement of CO_2 into the anterior rectus sheath is minimized by the Wisap monitoring equipment, but on occasion the introduction of the gas has been difficult. The ability of CO_2 to disperse rapidly and to be absorbed through body tissues affords a safety factor.

Thermal burns to the bowel by the electrical cutting forceps can be a major complication requiring laparotomy.[23] Thermal burns to the skin of the anterior abdominal wall were seen in two early cases, resulting from improper grounding of the electrical cutting forceps. Both healed uneventfully. None of the author's 325 cases has required a laparotomy for complications. None has required re-admission to the hospital.

In two patients vague, unexplained lower abdominal discomfort occurred one to two weeks postoperatively and spontaneously resolved in another two weeks.

There has been a complete lack of wound infections, a phenomenon noted by others.[23] One patient developed post-operative cystitis. No pregnancies after laparoscopic B.P.S. were reported.

In cases 12 and 18, satisfactory abdominal entry was not achieved, the problem being operator inexperience with the technique. That obstacle has not been encountered subsequently.

Previous intra-abdominal surgery (appendectomy, caesarian section, intestinal obstruction surgery, uterine suspension, and various types of tubo-ovarian surgery) has been encountered in 49 (15.8%) of the patients and has not been a problem. Chronic pelvic in-

TABLE 3*

DIAGNOSTIC LAPAROSCOPY

3	Psychosomatic pelvic pain
3	Chronic P.I.D. with hydrosalpinx
3	Unexplained infertility — tubal patency test also normal
3	Pelvic congestion syndrome
1	Endometriosis
2	Fibroids
3	Stein-Leventhal syndrome
1	Ruptured hemorrhagic cyst of ovary
2	Normal pelvic findings
1	Aspiration of 300 cc hematoperitoneum from ruptured corpus luteum (no further surgery needed)
1	Biopsy metastatic ovarian carcinoma and aspiration of 1600 cc ascites
1	Intrauterine pregnancy with large cystic corpus luteus
1	Adenofibroma and simple cyst of ovary
1	Portal hypertension, massive spenomegaly and cirrhosis of liver. Liver biopsied
1	Cirrhosis of liver. No metastasis of carcinoma of colon. Liver biopsied
1	Fatty degeneration of liver. Liver biopsied
1	Hemosiderosis and biliary cirrhosis. Liver biopsied
29	

Tubal patency test and D & C were done in conjunction with laparoscopy on some of these cases.

Definitive surgery via laparotomy directly followed in six cases.

*Tables 3 and 4 together present 325 consecutive private cases.

TABLE 4*

DEFINITIVE SURGERY

218	Bilateral partial salpingectomy (B.P.S.)** for sterilization
36	B.P.S. with aspiration for therapeutic abortion
6	B.P.S. following saline induced second trimester abortion
4	B.P.S. with lysis of intestional-pelvic adhesions
13	B.P.S. with D & C and cervical biopsy
5	B.P.S. with D & C and cervical conization
4	B.P.S. with D & C
2	B.P.S. with liver biopsy (normal)
1	B.P.S. with perineal fistulectomy
1	B.P.S. with uterosacral ligament denervation, biopsy and cautery of cul-de-sac endometriosis
1	B.P.S. with ovarian cystotomy (40 cc drained from simple follicle cyst)
1	lysis intestional-uterine adhesions (pelvic pain)
1	lysis of tubo-ovarian adhesions (infertility)
1	maniplation of omentum out of ruptured uterus (immediate post therapeutic abortion performed)
2	technical failures requiring laparotomy
296	

*Tables 3 and 4 together present 325 consecutive cases.

**Unilateral partial salpingectomy done in four cases with previous unilateral adnexectomy.

flammatory disease in ten patients has not interfered with successful laparoscopy. Postoperative antibotics have been routinely given when partial salpingectomy was performed on a fallopian tube showing any signs of inflammation. No clinical signs of acute infection have been apparent in these cases.

Tables 3 and 4 show a total of 325 cases.

Diagnostic laparoscopy offers certain distinct advantages in evaluating acute chronic pelvic pain. Often simple techniques of aspirating simple cysts and evaluating intra-abdominal bleeding can be done in place of laparotomy. Certainly one should not biopsy or aspirate suspicious non-metastatic ovarian tumors. The limitations of the technique must be constantly borne in mind.

The finding of four grossly abnormal livers in asymptomatic patients for laparoscopic bilateral partial salpingectomy, and techniques developed for study of the upper abdomen with laparoscopic liver biopsy will be the subject of another paper.

The author finds as have others[23] that the infertility patient is an excellent subject for the technique and the procedure is far superior to the traditional culdoscopy.

Far and away, the main indication for laparoscopy has been B.P.S. for sterilization. With their families completed, many women rebel at continuous use of contraceptive measures, and some have had serious complications with either the intrauterine device or the birth control pill. Patients sterilized have ranged in age from 19 to 47, having no to eleven children. Consultation has been obtained for all cases. There was psychiatric counselling when indicated. The irreversibility of the procedure has been emphasized and surgery refused if this operator felt that the patient's decision was immature. No pregnancies have been reported in follow-up.

Diagnostic D & C, cervical biopsy, cervical conizations, aspiration curettage for therapeutic abortion, and minor procedures can be performed immediately prior to laparoscopy.

TABLE 5

Advantages of Laparoscopy

Most cases can be outpatient surgery:
  (a) decreases bed utilization
  (b) is economical
Anesthesia — general, conductive, or local
Frequently replaces laparotomy for diagnostic and definitive surgery
Previous abdominal surgery not a contraindication
Patient may be any age
Rapid surgical procedure
Postoperative pain absent or minimal
Patient may resume all activities day following surgery
Complications rare

Uterosacral ligament denervation for severe dysmenorrhea secondary to endometriosis performed through the laparoscope has not been reported previously. The denervation was accomplished with ease but only mild reduction in dysmenorrhea resulted. (Case number 254)

Description of another innovation follows. A 21-year-old gravida II para I conceived after insertion of a Lippes Loop type of intrauterine device at approximately five weeks post-partum. She was referred for therapeutic abortion. Aspiration curettage at 12 weeks' gestation proceeded eventfully until the intrauterine device was found protruding through the uterine wall. The IUD was removed. Re-aspiration resulted in omentum being sucked through the uterine rupture, and discovery by the operator when the aspirator was withdrawn from the cervix. The omentum was immediately returned to the uterine cavity and emergency laparoscopy performed. (Case number 261) The bowel was intact, and only several cc of blood seen in the peritoneal cavity from the rupture through which the omentum entered the uterus. Utilizing the laparoscopic operating probe, the omentum was returned to the abdominal cavity and the bleeding observed to be venous and minimal in amount. After three days of careful hospital observation the patient was discharged to what has proven to be uneventful follow-up.

Advantages

Table 5 cites numerous advantages of laparoscopy. It should be stressed that many hundreds of patient bed days, and tens of thousands of dollars have been saved by performing laparoscopy as an outpatient procedure. The ability of patients to resume full activity, often in hours, affords an additional tremendous saving to patients, their families, and their employers. The development and cooperation of the gynecological outpatient unit at the Wilmington General Division of the Wilmington Medical Center has been outstanding. The Ob-Gyn resident staff has become competent in performing the procedure, and this relatively low cost method of sterilization is now being widely used for the benefit of all income groups in our area.

Summary

1. Three hundred twenty-five personal consecutive cases of laparoscopy for diagnosis and surgery have been reviewed.
2. The background, technique, indications, contraindications, and advantages of laparoscopy have been discussed.
3. New techniques and expanded uses of laparoscopy have been developed.
4. Laparoscopy has proven to be a rapid, reliable, safe, and simple method of surgical sterilization.
5. No pregnancies have been reported in the follow-up of 291 patients sterilized.
6. The traditional five day stay for bilateral partial salpingectomy has been virtually replaced by a three to six hour outpatient stay.
7. No major complications have been encountered, but laparoscopy must be considered a sophisticated technique and used with prudence. Traditional methods of intra-abdominal diagnosis should not be discarded, and care must be taken not to misuse the newer methods. Laparoscopy is not a "Band-aid operation" even if a Band-aid is used postoperatively. Laparoscopic procedures are major intra-abdominal operations performed through minor incisions.

8. Constant attention must be focused upon innovative techniques in medicine, such as laparoscopy, which effectively decrease hospital bed utilization while still offering quality medical care at marked reduction in cost. These new techniques, as well as markedly reducing postoperative disability, are revolutionizing operative gynecology.

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EVALUATION OF THE CHILD WITH ISOSEXUAL PRECOCIOUS PUBERTY

The child with precocious development of sexual characteristics presents a vexing problem to both the responsible physician and the parents. In this article the causes of sexual precocity are discussed, and an approach to the diagnostic and therapeutic management of such children is presented.

Allen W. Root, M.D.

Precocious puberty (sexual precocity) may be defined as the development of primary or secondary sexual characteristics prior to the normally expected age — in girls, age eight, in boys, age ten. In patients with isosexual precocity, development is compatible with the phenotype of the child. In patients with heterosexual precocity, sexual characteristics are at variance with the phenotype; there is virilization of the female and feminization of the male. Heterosexual precocious puberty will not be discussed herein, as this has been the subject of a previous paper.[1]

Preliminary Considerations

The gonads (ovaries and testes) are con-

Dr. Root is Chairman, Division of Pediatrics, Albert Einstein Medical Center, and Associate Professor of Pediatrics, Department of Pediatrics, Temple University School of Medicine, Philadelphia, Pennsylvania.

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trolled by the pituitary gonadotropins, follicle stimulating hormone (FSH), and luteinizing hormone (LH). In the female, FSH regulates oogenesis and estrogen secretion. LH is required for ovulation, corpus luteum formation, and the initiation of progesterone secretion.

See related editorial, page 84.

There is a characteristic mid-menstrual cycle peak of LH which immediately precedes ovulation. Estrogens influence normal feminine habitus, growth of the uterus and endometrium, labia, and breasts. Progesterone further stimulates estrogen-primed endometrial and breast growth. Adrenocortical androgens stimulate pubic, labial, and axillary hair growth in the pubertal female (the pubarche or adrenarche). In the male, FSH stimulates growth and maturation of the spermatic tubule and spermatogenesis; LH enhances growth of the interstitial (Leydig) cells and testosterone synthesis and secretion. Testosterone produces the pubertal growth spurt, phallic enlargement, scrotal virilization, facial, pubic, and axillary hair growth, and masculinization of the body contours.

Pituitary gonadotropin secretion is influenced by several factors. Within the hypothalamus are catecholamine-responsive neurons which contain peptide-releasing factors (hormones?). After entering the pituitary through the pituitary portal vascular system, these neurohumoral peptides stimulate specific pituitary gonadotropes to release (and possibly also to synthesize) FSH and LH. A decapeptide with both LH- and FSH- releasing activities has been identified,[2] and a four amino acid molecule which possesses LH releasing activity only has been synthesized.[3]

Gonadal products may influence secretion of the gonadotropins. In the female, estrogens usually inhibit FSH and LH secretion, acting indirectly by suppressing hypothalamic gonadotropin-releasing activity (the "long feedback loop"). Under certain circumstances, such as the mid-cycle, pre-ovulatory increase in estradiol levels which immediately precedes the ovulatory LH surge, estrogens may stimulate LH secretion.[4] Progesterone and testosterone inhibit LH secretion but have little or no effect upon FSH release. The mechanism by which FSH secretion is governed in the male is incompletely understood. A seminiferous tubular product (termed intermedin) is thought to regulate FSH secretion, but the chemistry and cell of origin of this material are unknown.[5] Pituitary gonadotropins may inhibit their own secretion by depressing hypothalamic gonadotropin-releasing hormone activity (the "short feedback loop").[6] Gonadotropin-releasing hormones may inhibit their own elaboration within the hypothalamus (the "ultra-short feedback loop").[7]

Extrahypothalamic areas of the central nervous system may modify hypothalamic gonadotropin-releasing-hormone activity. The pineal is a light-sensitive structure which synthesizes unique monoamines (melatonin, etc.), which may inhibit hypothalamic gonadotropin-releasing-hormone activity and gonadotropin synthesis in the rat.[8] The role of the pineal in the economy of sexual maturation in man has not as yet been completely assessed. The amygdala of the rat also influences hypothalamin function and gonadotropin secretion through its hypothalamic radiation — the striae terminalis. Section of the striae terminalis or pinealectomy advances the onset of puberty in the immature female rat.[9] Higher central nervous system structures also modulate hypothalamic-pituitary-gonadal function; the influence of the emotional state upon menstrual function is widely appreciated.

Recent studies indicate that the prepubertal human child secretes gonadotropins and gonadal products, and that the secretion of these materials increases as the child ages.[10] In experimental immature animals the hypothalamic receptor sites of inhibitory (negative) feedback stimuli are extremely sensitive to both androgens and estrogens. The degree of sensitivity decreases as the animal ages until the sensitivity level approximates that of the sexually mature animal, and an adult reciprocal relationship between pituitary and gonadal secretory activity is established.[11] The mechanism by which the sensitivity of the hypothalamic receptor sites declines is unknown. There may be intrinsic age-related alterations in receptor cell physiology, or the influence of the extra-hypothalamic inhibitor sites may wane with age, permitting the hypothalamic receptors to express their intrinsic sensitivity level. In the rat, pinealectomy or sectioning of the striae terminalis advances the onset of puberty. Diseases of the central nervous system which are accompanied by sexual precocity suggest that this may also be a mechanism of premature hypothalamic activation in man.

Clinically a child passes through several well defined stages of sexual development until he (she) achieves sexual maturity.[10,12]

The stages of female sexual development are:

Stage I —prepubertal
Stage II —breast bud development (thelarche, 8-13 years)
Stage III—further breast enlargement, pubic hair growth (adrenarche, 8-14 years)
Stage IV— menarche (9-16 years)

The stages of male sexual development are:

Stage I —prepubertal
Stage II —testicular enlargement, scrotal thinning
Stage III—widening of the phallus, pubic hair growth
Stage IV— lengthening and widening of the phallus, further testicular and pubic hair growth
Stage V — adult-sized testes and penis, adult distribution of pubic hair

Etiology of Sexual Precocity

Table I presents an etiologic classification of isosexual and heterosexual precocity.

Female In patients with true, complete isosexual precocity the hypothalamic-pituitary-gonadal axis functions in a manner in advance of the patient's chronologic age. Gonadal activity is modulated by the pituitary gonadotropins, which are regulated by the hypothalamic releasing factors.[13] No specific etiology is recorded in the majority of girls with this diagnosis, and hence it is of idiopathic (cryptogenic, constitutional) origin, although many subjects have subtle electroencephalographic changes.[14] Polyostotic fibrous dysplasia (McCune-Albright syndrome) is characterized by irregularly edged, "coast of Maine," cafe-au-lait-lesions and sexual precocity in addition to the bony abnormalities. Isosexual precocity may accompany a variety of insults to the central nervous system, such as neoplasms or congenital cysts of the hypothalamus, injury, viral encephalitis, and bacterial and mycobacterial meningitis. The association of primary (congenital or acquired) hypothyroidism with precocious puberty has been recorded more frequently in females than in males. It has been suggested that the secretion of thyrotropin and gonadotropins is increased in these patients as a result of indiscriminate pituitary hyperactivity.[15] However, urinary and serum gonadotropin values have not been increased in these patients. Gonadal hypersensitivity to gonadotropin stimulation has been recorded in hypothyroid animals,[16] and is perhaps due to the slow metabolic disposal of these materials.

Gonadotropin secreted by teratomas or chorionepitheliomas may stimulate ovarian secretion, but gonadotropin elaboration is independent of hypothalamic control.[13,16] Ovarian granulosa and theca cell tumors have been excised from girls with sexual precocity. Estrogen secretion is autonomous in these patients. Follicular and luteal cysts may be found in patients with isosexual precocity, but are probably secondary to prolonged gonadotropin stimulation rather than of primary etiologic significance. Estrogen-secreting adrenal tumors are more frequently recognized in males than in females, but should be considered in girls if a mixed clinical picture of virilization and feminization is observed. The ingestion or topical application of exogenous estrogen will produce estrogenic effects; estrogens have inadvertently contaminated baby foods, drugs and vitamin preparations.

"Incomplete" sexual precocity is the development of breasts (premature thelarche) or pubic and/or axillary hair (premature pubarche or adrenarche) without evidence of generalized systemic hormonal activity. Breast development in the neonate is secondary to

TABLE 1

Etiology of Sexual Precocity

I. Isosexual
  A. Female
    1. True, complete
      a) "Idiopathic"
      b) Polyostotic fibrous dysplasia
      c) Central nervous system insult (neoplasm, congenital cyst, hamartoma, meningitis, encephalitis, brain abscess, congenital anomaly, injury, tuberous sclerosis)
      d) Hypothyroidism
    2. Gonadotropin-secreting neoplasm
      a) Chorionepithelioma
      b) Teratoma
    3. Pseudoprecocity
      a) Ovarian
        (feminizing mesenchymoma, luteal cyst)
      b) Adrenal
        (feminizing adenoma, carcinoma)
      c) Estrogen ingestion or application
    4. "Incomplete"
      a) Premature thelarche
      b) Premature pubarche (adrenarche)
    5. Miscellaneous
      a) Vaginitis
      b) Vaginal or cervical neoplasm
  B. Male
    1. True, complete
      a) "Idiopathic"
      b) Familial
      c) Central nervous system insult (see above, pinealoma, neurofibroma)
      d) Hypothyroidism
    2. Gonadotropin-secreting neoplasms
      a) Hepatoblastoma
      b) Teratoma
      c) Chorionepithelioma
    3. Pseudoprecocity
      a) Testicular
        (Leydig cell, adrenal rest neoplasm)
      b) Adrenal
        (congenital adrenal hyperplasia, virilizing adenoma, carcinoma)
      c) Androgen administration
      d) Chorionic gonadotropin administration
    4. "Incomplete"
      a) Premature pubarche (adrenarche)
      b) Gynecomastia
        (neurofibromatosis, Klinefelter's syndrome)

II. Heterosexual
  A. Female
    1. Adrenal
      a) Congenital adrenal hyperplasia
      b) Virilizing adenoma, carcinoma
    2. Ovarian
      a) Arrhenoblastoma
    3. Androgen administration
  B. Male
    1. Adrenal
      a) Feminizing adenoma, carcinoma
    2. Neurofibromatosis
    3. Estrogen administration

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estrogen exposure *in utero* and occasionally may persist. Although the etiology of premature thelarche is unknown, it may represent extraordinary sensitivity of breast tissue to normal amounts of estrogen, or may be a manifestation of undetected environmental estrogen exposure. Perhaps there are materials in the environment which are not considered estrogenic, but which may be metabolized to compounds with estrogen-like activity because of an individual's genetic ability.

In patients with premature pubarche there is precocious development of pubic or axillary hair without virilization and without other systemic manifestations of hormonal activity. Many patients with premature pubarche have slightly advanced skeletal maturation (bone age), but further development does not occur at an inordinately rapid rate.[13] The adrenarche may occur as the first sign of true, complete idiopathic sexual precocity in certain patients and, it may initially, therefore, be difficult to differentiate these two conditions. An intravaginal foreign body or neoplasm of the vaginal or cervical mucosae must also be considered when evaluating a youngster with vaginal discharge or bleeding.

Males Much of the previous discussion concerning sexual precocity in females also is pertinent to males; the following paragraphs will emphasize those points which primarily relate to males with sexual precocity. In contrast to females, there is a high incidence (approximately 33 percent) of central nervous system abnormalities in males with true, complete sexual precocity.[13] Repeated evaluation of the male with this syndrome is, therefore, important. However, in patients with familiar, sex-limited, isosexual precocious puberty, definable neurologic lesions are almost never observed. In these families precocious maturation occurs only in male members, although the trait may be transmitted through females.[17]

Gonadotropin-secreting hepatoblastomas have to this time been identified only in males.[18] In boys with isosexual pseudo-precocity, androgen secretion is independent of gonadotropin control and often originates from extratesticular tissue, particularly the adrenal. Testicular size is compatible with chronologic age in these children and not with their general somatic or sexual development, and thus the testes are disproportionately small. The simple virilizing form of congenital adrenal hyperplasia (an autosomal recessive inheritance) is the most common etiology of this syndrome,[1,13] while androgen-secreting adrenal and testicular neoplasms may also be observed. In the latter instance there may be unilateral testicular enlargement. The administration of natural or synthetic androgens in pharmaceutical preparations designed to stimulate anabolism will virilize the patient if prescribed in amounts sufficient to induce significant increase in linear growth velocity. Human chorionic gonadotropin administered to subjects with cryptorchidism will stimulate Leydig cell activity and testosterone secretion. Gynecomastia is observed occasionally in boys with neurofibromatosis, but the relationship between these entities is obscure.

Evaluation of the Child with Sexual Precocity

Evaluation of the child with precocious puberty is initiated by a thorough historical review during which one systematically inquires into the sequence and timing of the developmental changes, alterations of linear growth velocity, exposure to environmental hormones and other drugs, symptoms related to the central nervous and other body systems, and family history. The physical examination includes a general evaluation including recording of body measurements and vital signs, the degree and stage of sexual maturation, a thorough neurological evaluation, careful abdominal and rectal examinations, and meticulous palpatation of the tests (males). In addition, visual field evaluation is carried out in all subjects in whom there is suspicion of a central nervous system lesion.

The skull is surveyed roentgenographically; and the degree of roentgenologic skeletal maturation (ie, bone age) is assessed, employing multiple epiphyseal centers.[13] Bone age is often significantly advanced in patients with true sexual precocity, adrenal or gonadal neoplasms, and congenital adrenal hyperplasia, modestly advanced in subjects with premature pubarche, compatible with chronologic age in children with premature thelarche, and retarded in patients with hypothyroidism and precocious puberty. Vaginal smear or urethral sediment examination may reveal estrogen stimulation, a sign of generalized systemic estrogen effect.

Determination of serum and urinary LH and FSH values by specific radioimmunoassays will permit further classification. LH and FSH levels may be increased in patients with true precocious puberty, whereas in premature thelarche and premature adrenarche they will be appropriate for the patient's age.[10] Measurement of urinary 17-ketosteroid and estrogen secretion rates are often of little diagnostic value. Determination of specific estrogens and androgens (estradiol, estrone, testosterone, etc.) will be of diagnostic significance when these methods become more widely available; experience with these assays is limited at present.[19,20] The urinary excretion of 17-ketosteroids and pregnanetriol is increased in patients with congenital adrenal hyperplasia,[1,13] although they may also be slightly elevated in patients with testicular interstitial cell tumors.[21] Electroencephalography, as well as more intensive examination of the central nervous system, including pneumoencephalography, carotid arteriography, isotopic brain scanning, etc., should be undertaken in patients in whom a lesion of the central nervous system is suspected. Pneumoperitoneography permits contrast visualization of the pelvic structures and assessment of ovarian size. Retroperitoneal air insufflation and adrenal venography may be considered when a neoplasm of the adrenal gland is suspected. Tests of thyroid function should be carried out in patients with suspected hypothyroidism.

The clinical course of patients with sexual precocity is extraordinarily variable, and initial evaluation is important to obtain baseline data against which future changes may be compared, as well as to exclude tumors or other treatable diseases of the central nervous system, thyroid, adrenal, and gonads. Once this review has been accomplished, the patient should be observed continuously for six to twelve months and the rate of progression of sexual development assessed. In young females with breast development, breast size may spontaneously decrease, remain stationary, or progressively increase. Skeletal maturation may advance at a normal or very rapid rate. Linear growth velocity may be normal or accelerated. Patients with far advanced sexual maturation when initially examined, may experience regression, stabilization, or progression of findings. Even patients who have menses may have spontaneous cessation of menstruation and regression of sexual development.

If during a reasonable period of observation there is rapidly progressive increase in the stage of sexual development and accelerated linear growth velocity and rate of skeletal maturation, with appropriate increase in serum gonadotropin levels and the continued absence of recognizable diseases of the central nervous system, thyroid, adrenal, or gonads, then the diagnosis of true, complete (idiopathic) sexual precocity may be established. Even at this point, continued observation may in occasional patients reveal spontaneous regression of sexual development at a later time.

In males, prolonged observation and repeated neurological and visual field examinations and roentgenographic survey of the skull are required in order to detect an intracranial neoplasm.

Treatment

No specific medical therapy is indicated in patients with premature thelarche or premature adrenarche. The parents of patients with premature thelarche are instructed to dress their child in loose-fitting clothes in order not to emphasize breast size. In patients with diseases of the central nervous system, thyroid, adrenal, or gonads, specific therapy is required. Surgical excision of intracranial, adrenal or gonadal neoplasms associated with sexual precocity will often be followed by regression or stabilization of the signs of sexual maturation. Administration of thyroid hormones to subjects with hypothyroidism and of adrenocorticotrophin suppressive doses of cortisone or hydrocortisone to patients with simple virilizing congenital adrenal hyperplasia will result in regression or stabilization of the signs of sexual maturation.

It is of great importance to provide a normale environment in which to rear the child with true, complete (idiopathic) sexual precocity, and to emphasize to the parents, family, and teachers that the child's psychosocial maturational level is appropriate for the chronologic age even though somatic and sexual development may exceed the norms. These girls must be protected from harmful environmental elements, inasmuch as they are potentially fertile. They tend to be shy and retiring youngsters who are aware of the differences between themselves and their peers. Treatment with progestional agents, such as medroxyprogesterone acetate, has been followed by arrest or regression of sexual hair and breast development, cessation of menses, and decline in serum and urinary levels of gonadotropins and testosterone in many patients with true complete sexual precocity not associated with lesions of the central nervous system.[22] But this agent has not been completely satisfactory because: not all subjects respond to the medication; it does not influence the rate of progression of skeletal maturation so that premature fusion of the epiphyses occurs and there is a compromised adult height; there is prolonged suppression of hypothalamic-pituitary-gonadal axis after medication is stopped; suppression of adrenal function may attend the use of large doses of the drug;[23] and the long-term effects of the drug are unknown.

It may be anticipated that when there are developed products which inhibit the secretion of the gonadotropin-releasing factor(s) (such as melatonin), which interfere with the action of the releasing factor at the pituitary level, or which antagonize the effects of the gonadal products at the periphery they will be of value in the treatment of patients with true, complete (idiopathic) sexual precocity.

Summary

The mechanisms which regulate the activity of the hypothalamic-pituitary-gonadal axis have been discussed and the stages of sexual maturation listed. The differential diagnosis, evaluation, and management of the child with isosexual precocity have been presented. Appropriate therapy is dependent upon correct diagnosis of the type and etiology of sexual precocity in the individual patient.

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COMPUTER "DISTRACTED" BY WOMEN AT CONTROLS

A machine at the Novosibirsk computing center, Moscow, unfailingly gave correct answers to male mathematicians, but as soon as a woman approached it, the computer began to give wrong or absurd answers. It turned out to be women's clothes that did the trick. Synthetic fibers produced an electric field which affected the computer's performance.
Viva la difference!

Tass, official Soviet press agency

Considerations in Forming a Group Practice

Leif C. Beck, L.L.B.

Economic and governmental regulatory factors are creating increasing pressures upon the solo practice of medicine. These pressures are in many cases causing doctors to abandon their individual practices and join together in new joint practices. I anticipate that this trend will continue.

Practicing together, however, whether as partners or corporate shareholder-employees, involves a number of considerations absolutely new to the former solo physicians. While the doctors involved may refer to their attorneys, accountants, or other advisors for guidance in determining the right relationships, they should recognize that there is absolutely no standard format. The partnership details that have worked for one satisfied group of doctors may be inappropriate for any other group because of differences in medical specialties, styles of practice, professional philosophies, personal economic needs, and (above all) the personalities involved.

Recognizing the individuality of each prospective group practice, I prefer to review with the doctors involved (the prospective partners) those considerations which should be discussed and agreed upon. Some of these items are described below in hopes that they will be useful both to doctors planning joint practices and to members of existing groups interested in reanalyzing their present relationships.

Philosophy Towards Group Practice

In my opinion, the most important prerequisite for a successful group practice is that the doctors involved have a solid understanding and appreciation of how they are going to work together. If they do not basically agree on attitudes towards medical care, interchanging of patient responsibilities, and the like, their relationship is unlikely to endure. Thus, I encourage clients combining their practices to discuss at length their philosophies towards medicine generally and particularly towards group practice. Even if such discussions require hours of the doctors' already scarce time, the hours will be well-spent in avoiding the heavy financial, time, and emotional costs of a later split-up.

There are two basically opposite philosophies towards group practice, and any group can obviously settle on its own attitude anywhere in between. On the other hand, doctors may adopt a "true" or "pure" group practice in which all patients are those of the entity and are not the responsibility of any particular physician. Scheduling of patients would be based simply upon what doctor's schedule has the open time, and all patient records would be merged into a single order with no separation or coding by "responsible" physician.

This first alternative has an advantage in that all members of the group might develop some experience with each patient. Furthermore, it permits the doctors to divide their patient load as equitably as possible, thus hopefully reducing an overload on one doctor at a time when one of his partners might be less busy. The disadvantage, of course, is that each doctor would have less continuing personal contact with a single patient, which some doctors feel reduces the quality of care they can render.

The other alternative is simply a continuation of the doctors' basic individual patient responsibilities, with the group practice merely offering expanded opportunities for coverage and professional peer consultation. A patient's regular appointments would be scheduled only with his "regular" doctor, although sick

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Mr. Beck is President of Management Consulting for Professionals, Inc., Bala Cynwyd, Pa.

visits, emergencies, night and weekend hospital visits, etc. could be handled by any partner scheduled for that time. While the advantage of this system is a doctor's ongoing personal contact and experience with the patient, a disadvantage would be his partners' comparative lack of such background in case of emergency.

I do not wish to take sides in this discussion, but I am surprised at doctors embarking upon group practice without really understanding how they would actually conduct it. It can become an early cause for a group's failure since it strikes at the members' basic views towards patient care. If the doctors will not explore these philosophies before working together, I do not think they should go on to consider other group practice details.

Distribution of Income

The other essential consideration of group practice is, quite obviously, how the doctors will share in the income earned by their joint endeavors. In fact, most management consultants are thoroughly convinced that inability to cut up the money pie satisfactorily causes more dissension and dissolution in medical groups than all other factors combined. This is not particularly because doctors are overly money-oriented, but as much or more because (whether we like it or not) compensation is a common measure of relative personal worth or value. Thus, because of both economics and ego, income division policies are the touchiest of problems in group practice.

How to divide income is such an important and possibly complex subject that I will deal with it separately in a succeeding issue. Suffice it to say for the moment that the problem requires the utmost of realistic analysis and candor.

Partnership or Corporation

Doctors planning to merge their practices seem consistently to dwell upon whether their newly formed venture should or should not be in corporate form. While that decision is indeed important, it can and should be deferred until other details have been settled. In fact, unless the economic and practical advantages of corporate form are overwhelming, I prefer that the new group start out as a partnership.

While offering well-known tax advantages, the corporate form is far less flexible than a partnership. Relative ownership interests are reflected in shares of stock, which must be purchased and paid for, and compensation takes the form of salaries which should be changed as infrequently as possible. Hence, if the initially agreed relationships between the doctors need adjustment after a period of "breaking in" together, the changes can be made far more easily within a partnership.

Similarly, it is far simpler, as a matter of practicality, economics, and law, to dissolve a partnership than a corporation. If the doctors' venture into group practice proves to have been unwise, with their dissolving after a year or two, they will minimize their frustration if only a partnership is involved. Thus, it is well to avoid the corporate form until the members' capacity to work together satisfactorily has endured a reasonable test period. A delay of as little as six months or a year in incorporating represents relatively minor tax differences when compared to the importance of assuring a satisfactory long-term relationship.

What Shall Be Group Income

It is important that the members understand in advance what income earned by each physician is to be shared by the group and what is to be his own personal income. There are two approaches. On the one hand, all income from medical activity, however earned would be treated as group income. This theory would treat as partnership income whatever a doctor earns from his hospital positions, medical teaching or writing on medical subjects, from odd hours, school or individual physician work, etc. It is based upon the concept that a partner should perform all medical work only in behalf of his group practice and that any outside medical activity may directly or indirectly affect his efforts for the partnership.

The opposite approach is that only the income generated within the group practice and recorded on the group's books (presumably only from patient services) is partnership income. This theory recognizes that the group should give each member his own free time away from the practice, and what he does with his "spare time" is for his own benefit. As a result, if he wishes to use his free days, weekends, or vacations writing a medical book or working with the school athletic team, he should be able to do so and earn whatever his extra efforts deserve.

I will not here choose sides between these approaches. The important thing is that the doctors involved talk out the alternatives, recognizing a range of middle grounds, and apply them honestly and realistically to their own personalities, side activities, and professional attitudes.

What Shall Be Expenses of the Group

Similarly, doctors in a common practice must understand which expenditures are to be borne by the group and which are to be personal. While office rent, aides' payroll, and the like would in all but the most complicated arrangements be partnership expenses, a variety of other expenses require advance agreement. These include automobile expenses, malpractice insurance premiums, professional society dues, purchases of medical books and periodicals, travel to and attendance at professional meetings and educational programs, and finally entertainment expenses.

Existing group practices vary widely in their attitudes towards these expense items. Some run all of these expenses through their groups, presumably because they have agreed that all these items are for the benefit of the group practice. In some cases, the doctors also have been led to believe that the listed expenses are more easily tax deductible by a partnership or corporation than on a doctor's personal income tax return. This proposition is doubtful at best, particularly in the case of two-, three-, and four-men groups.

Other partnerships (and corporations) exclude a number of these expenses from their joint books. Their attitudes generally recognize that tastes will and should vary enough that the partners should be free to spend as much or as little on the items as they wish without concern over each others' spending levels. An old and overused example of one partner using a Volkswagen as his business car and the other buying a new Cadillac each year is appropriate. An equal partnership of these two doctors will obviously be strained if their cars are purchased and maintained out of their joint income.

I prefer the latter approach to any and all expense items that might be subject to variations based on the doctors' tastes, life styles, etc. As a result, many partnership agreements or corporate employment agreements which I help develop provide that automobile ownership and expenses, professional meeting and educational program costs, and entertainment expenses are personal to each doctor. The other named items (insurance premiums, medical books and periodicals, and professional society dues) are usually common enough to all partners that they can be treated as expenses to be paid by the group.

Some group practices take a sound middle position with respect to such items as professional society and educational meetings. Their agreements specify that each doctor will be entitled to a stated dollar amount of expense for attendance at such meetings each year, and any expenses in addition to that must be borne by the doctor himself. The stated dollar figure is often $500 or $1,000, depending on the attitudes of the doctors. This arrangement has the advantage of making the anticipated expense levels payable out of group income, while putting a ceiling on the payments to keep the members' interests roughly equivalent.

Another alternative middle position would provide that each doctor is entitled to a stated number of days (perhaps one or two weeks) of absence each year to attend professional meetings and educational programs. Such agreements often go further to practically *require* each doctor to spend his allotted time, a concept which I admire in its emphasis on continuing professional development. The partnership (or corporation) will in many cases obligate itself to pay all the doctor's expenses for the authorized meetings, on the belief that they will be approximately equal so long as each doctor's days of absence are equal. It is true that one doctor's meeting might be in Hawaii this year while the other's is in Atlantic City, but many groups feel these differences will be averaged out over several years among doctors of good will.

Whatever the decision as to these expense items, I strongly urge that they be considered and detailed specifically in the written agreements. Each doctor will thus be able to know in advance what he can expect of his group and what he should budget out of his own funds, reducing another possible cause of discontent later on.

Other Items

There are a number of other items which must also be considered in advance. These include initial capital contributions, handling of accounts receivable, vacation, allowances, sick leave, treatment in case of extended illness or disability, retirement requirements, distributions upon death of a member, and provisions upon withdrawal of a member or dissolution of the group. They are important enough that they will be discussed in a succeeding issue. Hopefully this series will then provide a helpful starting point for the deliberations among doctors considering joint practice and for review by those already working together.

* * *

Editorials

THE VALUE OF REPORTING COMMUNICABLE DISEASE

Recently in Delaware there have been waves of illness called influenza although there has been a wide range of symptomatology and quite probably involvement by more than one disease entity. Awareness of the situation extended to the Division of Public Health more commonly through reports of heavy absenteeism in schools or industry than via official reports from physicians and other providers of health service.

The first official knowledge of the existence of a case of hepatitis is often gained when schoolmates or other associates appear requesting some globulin administration. It is noteworthy that some cases of tuberculosis come to attention only when there has been a fatal outcome, although it must be granted that the disease is not always suspected or diagnosed prior to death.

There is demand for compulsory immunization against certain diseases prior to school entry so that it is important to assess what is being achieved by the program of voluntary immunization and to identify those segments of the population where the sporadic cases appear.

All of this serves to emphasize the importance of physicians' reporting every case of communicable disease which comes to their attention so that official agencies can have an accurate picture of incidence and can institute appropriate control measures.

Venereal disease deserves special attention in this regard. It has recently been pointed out that gonorrhea in particular is completely out of control and that there has been continued resurgence of infectious syphilis. With the great bulk of these cases being managed by private practitioners, it is important to know the composition of this caseload. Perhaps the most frequent inquiry pertains to age, race, sex, and place of residence of those involved, whereupon it must be pointed out that official figures are biased in that those who receive treatment in public facilities are universally reported, while those who can afford treatment on a private basis are frequently unreported or unidentified. With this anonymity is lost the opportunity to identify source cases, and to apply prophylaxis against further spread.

It may be worthwhile to consider some of the reasons why we physicians neglect to report cases.

1. Lack of appreciation of the importance of an accurate statistical portrayal of each reportable disease.
2. Distaste for paper work (even though the Division of Public Health strives earnestly to simplify forms and facilitate the flow of desired data).
3. Opposition to anything that smacks of bureaucracy.
4. Uncertainty of correct diagnosis, of stage of infection, or of clinical significance. (Tentative diagnoses are welcome and each state health officer stands ready to offer consultation, diagnostic assistance, and suggestions for control of any problem encountered.)
5. Concern for confidentiality and unwillingness to enter a patient into a public record by name.
6. Misconception that the report of a case will automatically lead to a home visit and invasion of privacy.

This last point especially needs clarification. The law requiring laboratories to report all findings possibly indicative of venereal disease specifically provides that the Division of Public Health must treat these reports with strict confidence and that all effort to interpret their significance must be mediated through the attending physician who in turn must grant approval before the patient may be approached directly. This frequently requires cumbersome and frustrating quests for information from physicians who happen to have been on service at the time a reactive serologic test or other laboratory finding was obtained on a ward patient whom the doctor does not recognize or cannot recall. The issue is vigorously pursued when there is reason to suspect the patient is infectious, but the effort to secure clarification is greatly diminished in other cases and unfortunately some patients slip through the system without adequate evaluation or desirable treatment.

The law specifically provides that a physician may report by number if he does not wish to disclose the identity of his patient. In so doing, he assumes the responsibility that proper investigation is carried out not only to identify the source of infection but also to protect others who are at risk of having been infected by the individual in question. This is a formidable task which requires more time and energy than the average physician is willing to spend. The further investigation may not be a consideration with the late syphilitic, who is unlikely to be infectious; however, if he is not reported and his age, sex, and race are not made known to the proper authority, the opportunity is lost to ascertain that he may have been previously reported without the knowledge of the patient himself or of the physician now in attendance.

Obviously there is utmost responsibility to cooperate in every way possible. No patient should be deprived of necessary treatment, and no infected person should be extended further opportunity to infect others.

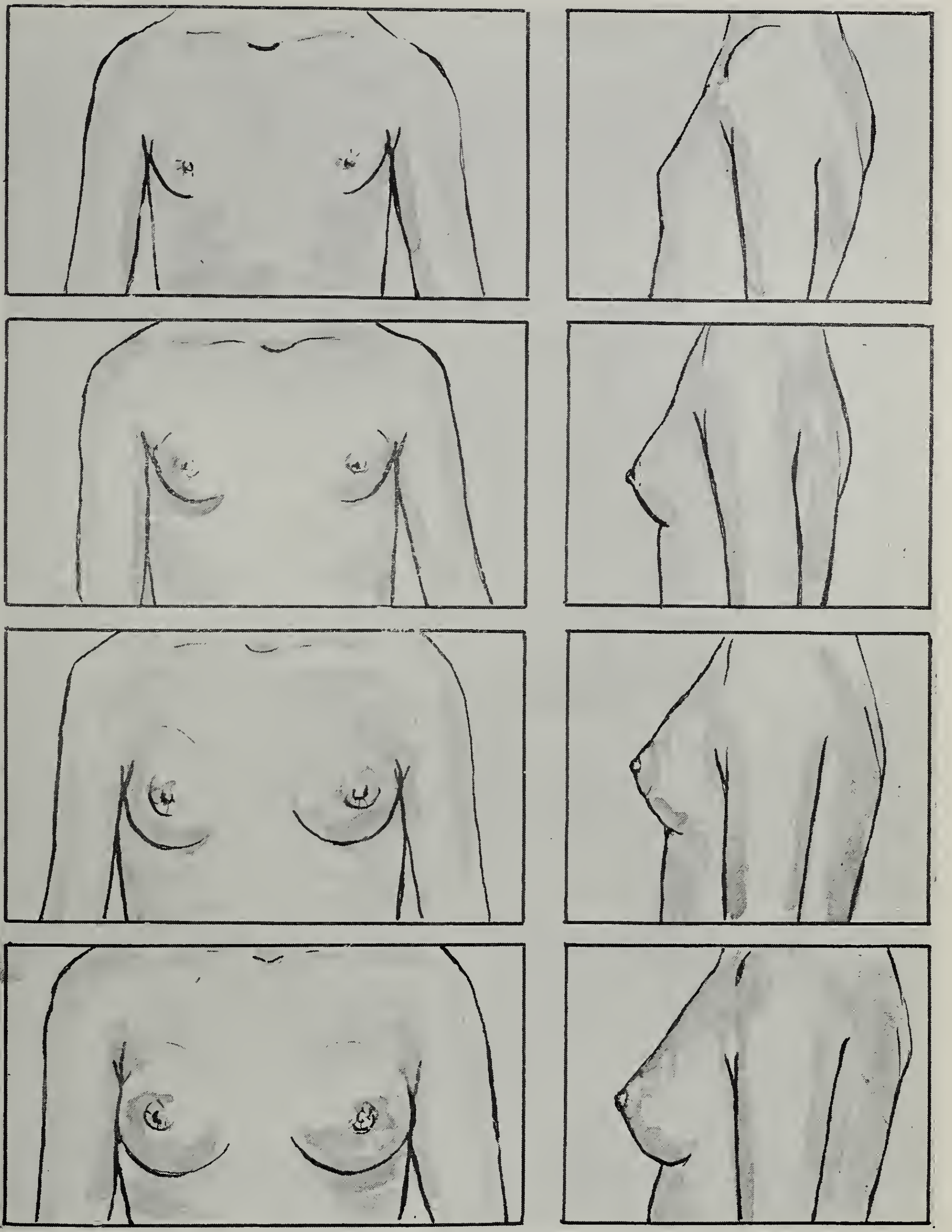
Winder L. Porter, M.D.

* * *

RECORDING ADOLESCENT PHYSICAL CHANGES: TANNER'S SYSTEM

Since the time of Hippocrates, physicians have struggled with the problem of converting their visual, tactile, and auditory impressions of the physical examination of their patients into written description. Over the years vegetables and fruits have been a favorite for comparison and thus thyroid nodules are pea-sized (early garden? late summer? French *petit pois?*) while tumors of the breast are,

FIGURE 1



STANDARDS OF BREAST DEVELOPMENT

Stage 1. Preadolescent. There is elevation of the papilla only. (Not illustrated.)

Stage 2. Breast bud stage. There is elevation of the breast and the papilla as a small mound. Areolar diameter is enlarged over stage 1. (Preadolescent)

Stage 3. Breast and areola are both enlarged and elevated more than in stage 2, but with no separation of their contours.

Stage 4. The areola and papilla form a secondary mound projecting above the contour of the breast.

Stage 5. Mature stage. The papilla only projects, with the areola recessed to the general contour of the breast.

The stage 4 development of the areolar mound does not ever occur in some girls; in probably a quarter it is absent and in a further quarter slight. Furthermore, when it does occur, it may persist well into adulthood. Stages 4 and 5 are not distinct in all girls.

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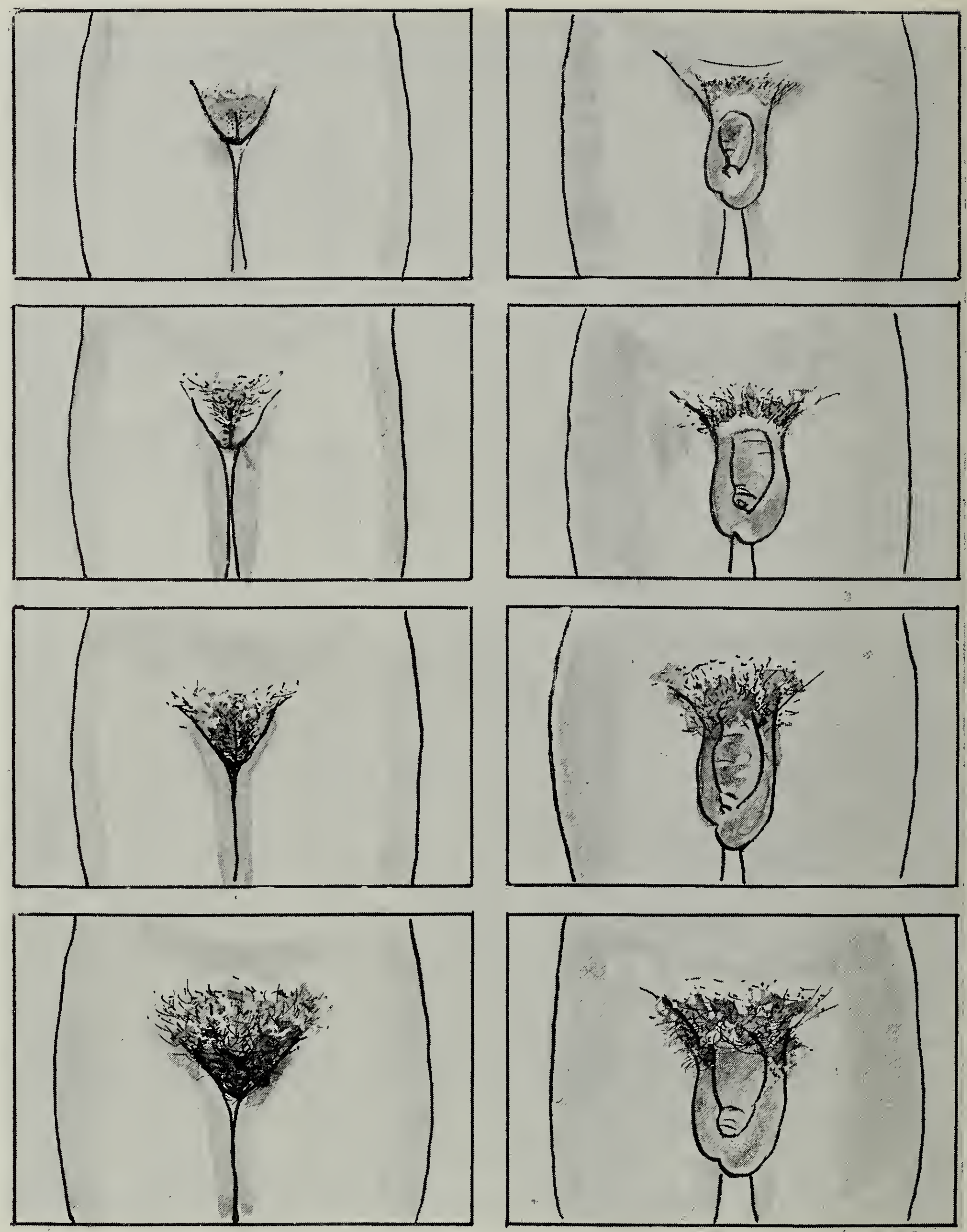
FIGURE 2



PUBIC HAIR DEVELOPMENT IN GIRLS AND BOYS

Stage 1. Preadolescent. The vellus over the pubes is not further developed than that over the abdominal wall, ie, no pubic hair. (Not illustrated.)

Stage 2. There is sparse growth of long, slightly pigmented downy hair, straight, or slightly curled, chiefly at the base of the penis or along the labia.

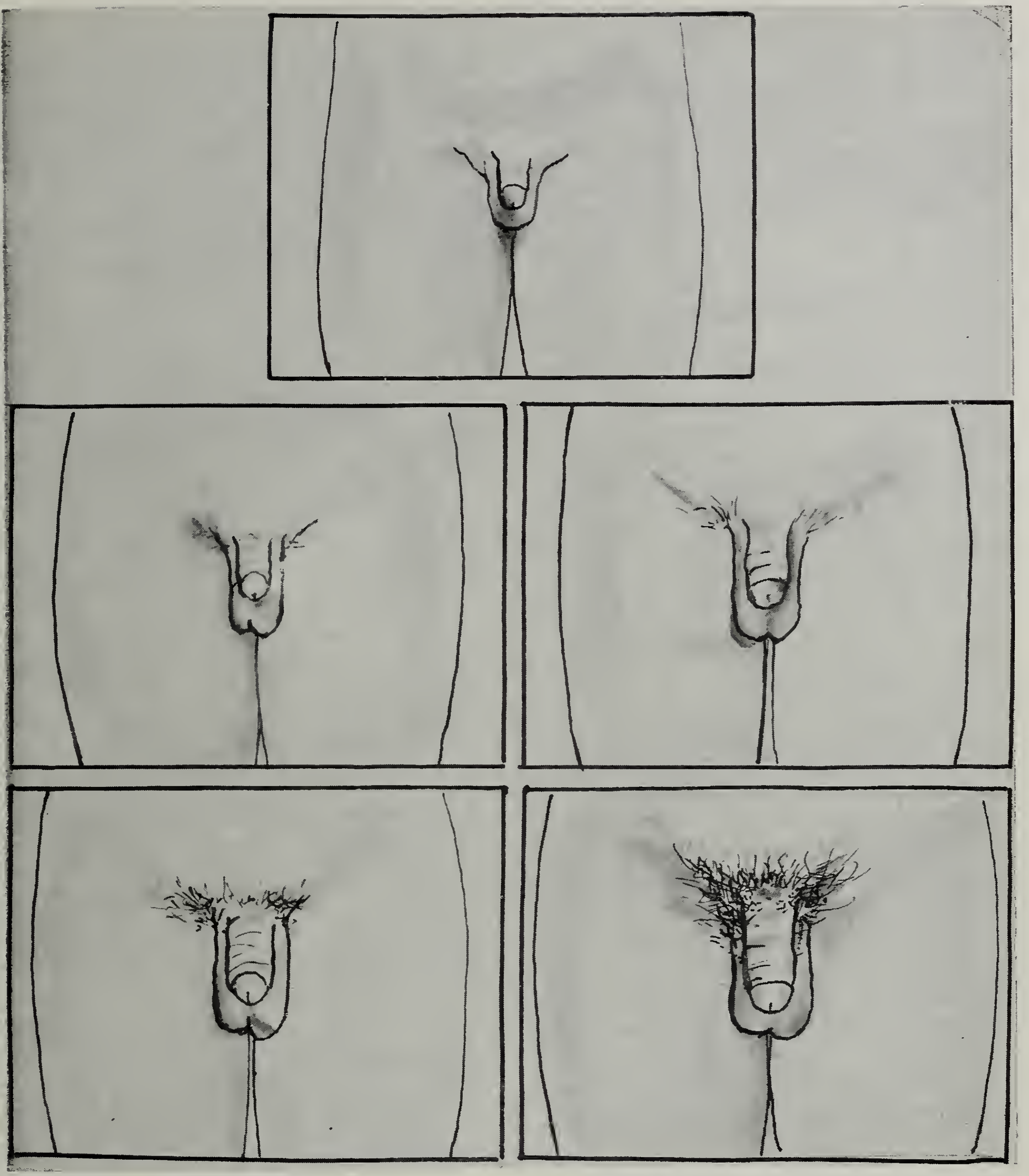
Stage 3. The hair is considerably darker, coarser and more curled. It spreads sparsely over the junction of the pubes.

Stage 4. Hair is now adult in type, but the area covered is still considerably smaller than in the adult. There is no spread to the medial surface of the thighs.

Stage 5. The hair is adult in quantity and type with distribution of the horizontal pattern. Spread is to the medial surface of the thighs, but not up the linea alba or elsewhere above the base of the inverse triangle (spread up the linea alba occurs late and is rated stage 6).

From *Endocrine and Genetic Diseases of Childhood,* Lytt T. Gardner, M.D., Ed., W. B. Saunders Company, Philadelphia, 1969.

FIGURE 3



GENITAL DEVELOPMENT IN BOYS

Stage 1. (Top) Preadolescent. Testes, scrotum, and penis are about same size and shape as in early childhood.

Stage 2. (Center left) Scrotum and testes are slightly enlarged. The skin of the scrotum is reddened and changed in texture. There is little or no enlargement of the penis at this stage.

Stage 3. (Center right) Penis is slightly enlarged, at first mainly in length. Testes and scrotum are further enlarged than in stage 2.

Stage 4. (Lower left) Penis is further enlarged, with growth in breadth and development of glans. Testes and scrotum are further enlarged than in stage 3. Scrotal skin is darker than in earlier stages.

Stage 5. (Lower right) Genitalia are adult in size and shape.

From *Endocrine and Genetic Diseases of Childhood,* Lytt T. Gardner, M.D., Ed., W. B. Saunders Company, Philadelphia, 1969.

alas, frequently plum-sized at the time of diagnosis.

In describing the pubescent changes of the breasts, genitalia, and sexual hair of older children and young adults, the adverbs *early*, *advanced* and *late* are frequently used, as well as the descriptions *scanty* and *moderate.*

Because the years of puberty, although years of marked physical changes, are frequently supremely healthy years in which the physician is infrequently consulted, he sees his patient at long intervals. He may have great difficulty in recalling just what his own description "early breast changes" actually meant if it becomes important to assess whether puberty is progressing satisfactorily or has for some reason slowed or accelerated beyond expectations. Another problem in the interpretation of subjective descriptive records of maturing physical changes is that adolescence is frequently the age at which the patient changes physicians, moving on from the pediatrician to the internist.

It is obvious that accurate notations of the findings on physical examination are always to be preferred to subjective descriptions — one man's *moderate* may well be another man's *advanced* with respect to maturation as well as politics. This may become increasingly important if future circumstances fulfill the clinical predictions of those who feel that very shortly most physical examinations of ostensibly well persons will be performed by technicians whose reports will then be passed on to the physician. This introduction is preamble to a reminder that an excellent rating system for the judgment of the developmental stage of puberty exists but is, unfortunately, too little known or used.

As long ago as 1938, Greulich suggested a rating system for the stages of breast development.[1] Ten years later a series of illustrative photographs was published in the American Journal of Diseases of Children.[2] Photographs of the developmental stages of adolescence were then published in Tanner's comprehensive and readable book, *Growth at Adolescence*,[3] and have been reprinted in Gallagher's *Medical Care of the Adolescent*,[4] and in *Endocrine and Genetic Diseases of Childhood.*[5]

Since wide variations both in the onset of pubertal changes and in their sequence are so common as to preclude the validity of any one pattern or timing being designated as normal, this simple system which enables rating of breast development, genital advancement in the male, and sexual hair stage in both sexes is highly to be recommended as standard procedure in the physical examination of adolescents.[6]

With the permission of Dr. Tanner, who is Professor of Child Growth and Health, Institute of Child Health, University of London, and Consultant in Growth and Development at the Hospital for Sick Children, Great Ormond Street, London, the accompanying charts have been prepared from Tanner's series of photographs. How much better than our present variable individual descriptive symptoms would it be if everyone who examined older children and young adults would use this one system. The notation, *breasts, stage 2; pubic hair, stage 3, Tanner,* would convey a precise meaning comprehensible at anytime by anyone familiar with the rating system. The proper eponymal designation of this system is difficult to decide. Primacy is not satisfactory since Greulich's terminology was amplified by Reynolds and Wines. Because the most commonly reprinted photographs are at present those which first appeared in Tanner's book, we suggest the appellation, Tanner's System.

It is our hope that these line drawings, more easily reproducible than the original photographs, will contribute to the increased use of "Tanner's System" for rating adolescent physical development.

B.Z.P.

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BETTER I SHOULD DIET

The food isn't the only heartburn provocative in a hospital cafeteria. Sitting next to a couple of young medical interns the other day, I sipped my minestrone and eavesdropped on their conversation. They were being very critical of the surgeons who had closed the patient's abdomen without a definitive diagnosis. Their attitude was a very superior one, unable to fathom the ineptitude of the scalpel mechanics who had been sent in to do a job and had failed.

I was about to offer a timid defense on the surgeon's behalf when a medical staff man whom I had known years ago when he was a rotating intern on the surgical service sat down. He had heard the interns' tale and had come to the rescue of the errant surgeons.

I frequently reflect upon the narrow channels that we are now permitting our confereres to enter, indeed forcing them to enter. Today's medical student gets practically no introduction to the recesses of the body's cavities and has little, if any, understanding of the crucial relationships of one vital organ to another. If he enters a straight medical internship, he may never have an opportunity to spend several hours hanging onto retractors and watching a struggling surgeon fight desperately to expose and remove some well-concealed organ without doing injury to the patient.

Or perhaps the student will start on a straight surgical career. Will he be able to learn about heart disease and gain an understanding about diabetes from senior surgeons who, themselves, were never exposed to an internal medicine program? (He may think a QRS complex is some sort of a Rooseveltian abbreviation for a bizarre psychiatric disorder.)

How can the "straight" medical physician understand what he can and cannot expect of surgery? How can he know what sort of experience his patients will have when he refers them to a surgeon? How can he know the limitations of surgery without an exposure to it? How can either the straight medical or the straight surgical house officer become more than a functionally trained mechanic in his own sphere?

Perhaps I won't notice the problem if I don't eat any more lunches at the hospital cafeteria.

C.I.G.

* * *

FOCUSING ON DELAWARE HEALTH SERVICES AUTHORITY

You have seen the title Delaware Health Services Authority since the middle of 1971. You have undoubtedly asked yourself what is this new organization? What will it do? Does it have any meaning for me, a physician licensed and practicing in the State of Delaware?

The history of the organization in its early formation is interesting. No conclusion should be firmly drawn from this history of the Delaware Health Services Authority which is still in its infancy.

The Greater Delaware Valley Regional Medical Program was composed of the Sovereign State of Delaware with sections from the greater Philadelphia area and southern New Jersey. It soon became evident that this program was not Delaware-oriented though Delaware was the only sovereign state in the Greater Delaware Valley Regional Medical Program. This lack of full involvement caused an Ad Hoc Committee to be formed from the existing areawide committee to find better ways to represent the State of Delaware. As a result it was suggested the best method would be to apply for an independent Regional Medical Program limited to the State of Delaware.

The Ad Hoc Committee was chaired by Harry E. Walkup, M.D., Director of the Wilmington VA Hospital. The other members of this committee were: Arva Jackson, Governor Peterson's Special Assistant for Human Affairs; Richard Griffith, then Executive Director of the Association of Delaware Hospitals; Mary Carl, Ph.D., Dean of the University of Delaware School of Nursing; Clifford Foster, Executive Director of the Health Planning Council of Delaware; and myself, a physician in Family Practice and then President of the Medical Society of Delaware. Later, after he was installed as President of the Medical Society of Delaware, Herbert Baganz, M.D., was added to the Committee. (Dr. Baganz was subsequently appointed Secretary of Health and Social Services in the cabinet of Governor Peterson.)

The Ad Hoc Committee, as is already recorded by history, won the goal they sought, namely, a State of Delaware Regional Medical Program. This program is now established and functioning at 5 East Reed Street in Dover under the directorship of Nasry Michelen, M.D. It was at a meeting with Vernon Wilson, M.D., Administrator of the Health, Education and Welfare's Health Services and Mental Health Administration, held for the purpose of establishing the State of Delaware Regional Medical Program, that the federal government proposed through Dr. Wilson the exciting concept that Delaware organize an Experimental Health Services Program.

Dr. Wilson pointed out that his office was interested in forming varied experimental programs across the country with the hope that the most effective programs would be completely implemented and established as on-going worthwhile entities. He envisioned that Delaware with its cross-section of all walks of life and life situations encompassed in one small state could give valuable insight to the federal government if an experimental health services could function within its boundaries. Thus a prototype health services was born, now known as the Delaware Health Services Authority.

Dr. Wilson's philosophy was that this Health Services Authority would be managed by the people of Delaware for the people of Delaware with a point of reference being maintained with the State Government through the ex-officio membership of the Secretary of Health and Social Services, the latter reporting to and informing the Governor. The Health Authority was to look at the many health programs in our state and establish, by valid data-collection, proof of the state's needs for these programs. Such data collection would be in full view and in full cooperation with those concerned so that the best of all programs would be the essence of Delaware's efforts and reapings; thus, with all agreed, the chaff could be eliminated to the benefit of all concerned.

The Health Services concept of Dr. Vernon Wilson's administration is unique in that it actively returns from direct federal management to people on the local scene the management and implementation of health care, thus permitting local citizens to relate to the local problems which a federal agency might not understand. This concept is perhaps an historical first. It delivers health care from federal management to management by those persons who, hopefully, best understand their own needs—namely individual citizens who through the health services can now put it all together by managing their own health care and health care systems.

After incorporation as the Delaware Health Services Authority, Inc., an organizational meeting was held in May 1972 with Dr. Herbert Baganz as Acting Chairman. Dr. Baganz made it definite that in his capacity as Secretary of Health and Social Services, he was only an ex-officio member of the Board of Directors of the Delaware Health Services Authority and that as soon as the Health Services Authority elected officers he would divest himself of all executive connection except that of the tenuous broken line in the organizational structure between that of the Health Services Authority and the Secretary of Health and Social Services. This he subsequently did.

Rhoslyn J. Bishoff, M.D., was elected President of the Delaware Health Services Authority, and Vincent Theisen, Esq., Mrs. Barbara B. Porter, and Mr. Felix Rapposelli were selected as Vice-President, Secretary, and Treasurer of the corperation respectively. Members of the Board were selected for either

DELAWARE HEALTH SERVICES AUTHORITY, INC.
BOARD OF DIRECTORS

PUBLIC	*	**	PROVIDER	*	**	PAYER	*	**	POLITICAL	*	**
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Delaware Regional Medical Program

Harry F. Camper, Dir.
Bureau of Comprehensive Health Planning

Hon. Daniel E. Weiss, Member
Delaware House of Representatives

*TERM EXPIRES: 1-1973, 2-1974 and 3-1975.
**COUNTY: NC-New Castle, K-Kent and S-Sussex.

three-, two-, or one-year terms by the drawing of lots. Future selection will be determined by the By-Laws and the necessity of circumstances as time develops.

To bring this history up-to-date, after a long and exhaustive search and a scrutiny of applicants from in and out of our state, Perry Scheinok, Ph.D., was selected as Executive Director to conduct the affairs of the Delaware Health Services Authority. Dr. Scheinok started his work officially on December 1, 1972, and is presently busy breathing life and purpose into this organization.

R.J.B.

Editor's Note:

As a member of both the Medical Society of Delaware and the Delaware Health Services Authority and responsible to each, the author offers the following suggestions. This introductory history is to inform you of the existence of the Health Services Authority. If you desire more information, you are cordially invited to direct inquiries to Dr. Perry Scheinok, Executive Director, Delaware Health Services Authority, Inc., 5 East Reed Street, Dover, Delaware, 19901. Also, follow-up reports in the Delaware Medical Journal will be provided as indicated or requested.

* * *

A NEW STATE BOARD MEDICAL EXAMINATION — NOW

The members of our State Board of Medical Examiners have become increasingly aware over the past several years how inconsistent and out-of-date our own state medical examinations are.

For many years our state board examinations have been prepared and graded by practicing physicians who are members of the Board of Medical Examiners. We, because of a Medical Practice Act which in itself is in need of change, are compelled to give ten different examinations in subjects ranging from anatomy and hygiene to the practice of medicine and pediatrics. Each exam is equally weighted. Although a valiant attempt is made to have each examiner write an exam in a subject he is best qualified in, this is often impossible because of the particular make-up of the membership of the examining board.

While the majority of the states have moved away from what I consider to be often outdated, inconsistent, and somewhat non-professional examinations, we have continued to give such examinations because of specific regulations outlined in the Medical Practice Act of 1964.

Six months ago an unsuccessful attempt was made to pass an amendment to that Act which would allow the Board of Medical Examiners to obtain and use Federal Licensing Examinations or FLEX. A second, and we hope successful, attempt will soon be made through House Bill #6 sponsored by Representative William Poulterer.

The Board feels that the FLEX examination is a professional, standardized examination, similar to National Boards in type but emphasizing clinical practice. To date forty states are participating in FLEX. Currently nineteen of the participating states will not accept another state's license if the candidate has failed FLEX in that state and returned to them with a license of another state via reciprocity unless, of course, that exam is a FLEX exam.

New York and New Mexico have elected not to accept for endorsement any state license that is not equivalent to their own, that is, either a National Board or FLEX examination. Conversely, Delaware is one of only two or three states that do not accept an applicant's having passed a FLEX exam.

Because of our tardiness in either giving or accepting a standard National Board or FLEX examination, several things have occurred in the past few years. Our Board of Medical Examiners has been literally besieged by a growing number of applicants for Delaware licensure by either reciprocity or examination. The majority of these candidates have no interest in practicing in Delaware. For example, in 1970, of 49 licenses granted by either reciprocity or examination, only 26 of the physicians are practicing in Delaware; this includes not only physicians in clinical practice but also in residency. In 1971 out of 94 licenses issued only 41 are practicing or in training, and in 1972 the numbers were 100 and 45 respectively. The discrepancy continues to increase. This year in January alone we had 57 candidates for our examinations. We shudder at the thought of how many will apply in June when we usually have a much larger group than in January.

Why is there such a growing interest in taking our current examination? It is because many applicants have failed a FLEX examination in another state or for one reason or another hesitate to take such an examination. They hope that if they pass our examination another state will accept our license by reciprocity. Only a few years ago all states except two accepted a Delaware license for reciprocity. However, if the current trend continues we will find that our license will not be accepted in most states.

Because the present law requires that we give our own examination, it is sometimes alleged that the Board could control whom we want and whom we don't want to practice in Delaware. To be put into such a position is neither proper nor necessary. Our own residents and interns have shown increasing displeasure in our continuing to use a local examination and refusing to accept either National Boards or FLEX.

As noted above, a second attempt will be made within the next few weeks to pass an amendment to allow Delaware to follow other states in giving the FLEX examination. Certainly FLEX is needed now.

Charles S. Riegel, M.D.

President's Page

DOCUMENTATION-CERTIFICATION PROGRAM A REALITY

In December 1971 Herbert M. Baganz, M.D., my predecessor as President of the Medical Society of Delaware, presented a message on this page about the physician's "obligation for continued education." Dr. Baganz went on to say, "A *documentation-certification* program of physician participation in continued education sponsored by the Medical Society of Delaware should be implemented now to demonstrate and maintain our responsibility and accountability. The documentation program should be a positive approach to continuing education and physicians' competence. The program can be additionally a strong means of reducing or even stopping governmental encroachment into the realm of medical practice concerned with physicians' competence and the quality control of patient care. The Medical Society of Delaware by establishing and being responsible for such an accreditation program will bring healthy working and coordinating relationships with government, specialty societies, teaching institutions, hospitals and voluntary health organizations. The upward thrust of professional liability insurance premiums can be partially contained by such a program. A compulsory program structured by governmental influences would be compromised to such an extent as to promote mediocrity and have a limited effectiveness for desired purposes. Everyone gains by our participation in continued education."

With the approval of the 1972 House of Delegates the Committee on Continuing Education and Certification has been developing a Documentation-Certification Program for voluntary use by our members. Their suggested program was approved by the Board of Trustees of the Medical Society of Delaware at the February 8th Board meeting.

A printed summary and record card will soon be mailed to all members. The card can be used for recording your continuing education activities during 1973. The program developed by the Medical Society of Delaware recognizes and allows direct credit for participation in the AMA Recognition Award, the American Academy of Family Physicians, or any other recognized program. You need only make a copy of their particular report card and forward it to the Medical Society of Delaware office during January 1974. Appropriate recognition will be given to those completing 150 hours of postgraduate study every three years.

The Medical Society of Delaware can be extremely proud of the fact that we are undertaking this program. The Trustees feel very optimistic that we will have a hundred percent participation without federal or local legislative action. We are proud of the fact that a great majority of our physicians participate almost weekly in recognized educational activities and now for the first time will be able to show by our example that such can be accomplished without legislative mandate. Though many of you who receive this may be "legally" exempt, it is our hope that you will participate and furnish an example to others.

Joseph A. Elliott

In Brief

Speakers on "Ask The Doctor"

Speakers for April, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: April 3, Carl I. Glassman, M.D., *Breast Cancer;* April 10, Robert L. Meckelnburg, M.D., *Confronting the Reality of Death;* April 17, Joseph W. Abbiss, M.D., *The Pathologist and Cancer Detection;* April 24, Peter V. Martin, M.D., *The Procto Exam.*

In The News

Ali Z. Hameli, M.D., has been elected President of the National Association of Medical Examiners.

Carl P. Mulveny, M.D., is the author of an interesting and very informative article in the January, 1973 issue of *Physician's Management,* entitled "How to 'Audit-Proof' Your Checkbook."

William Conner, formerly New Castle County Executive, will be the number two PSRO official in Washington. William Bauer, M.D., a Greeley, Colorado internist, will head the PSRO program.

New Health Center

Walter M. Knox, Executive Director of the Peoples Settlement Association, has announced the opening of the Eastside Health Center. It is located in the Settlement building at 408 E. 8th Street, Wilmington, and is staffed by Mrs. Luella Vogelsang, R.N., weekdays from 10 a.m. to 12 noon. The Eastside Health Center is a clinic providing various diagnostic and screening tests and referral service free of charge. Pamphlets describing the Peoples Settlement's services to the community, including the services of the Health Center are available; call 658-4133. Mr. Knox and Mrs. Vogelsang would appreciate physicians referring their indigent patients to the Center for free testing.

Family Practice Exam

The American Board of Family Practice announces that the next two-day written certification examination will be given on October 20-21, 1973 in various centers throughout the United States. Deadline for receipt of applications is August 1, 1973. Applications and information may be obtained by writing: Nicholas J. Pisacano, M.D., Secretary, American Board of Family Practice, Inc., University of Kentucky Medical Center, Annex #2, Room 229, Lexington, Kentucky, 40506.

Consultation Service

The Children's Hospital of Philadelphia has available a telephone consulting service for pediatricians and family practitioners in Pennsylvania, New Jersey, and Delaware. Doctors may call 24 hours a day to receive advice from experts in various related fields. The telephone number for the service is (215) KI 6-2700, Ext. 557. The intake worker tries to connect the physician directly with the consultant or leaves word for the consultant to call as quickly as possible. Shirley Konnem, Director of Public Relations, 18th and Fitzwater Streets, Philadelphia, has more information available for interested physicians.

Mediclinics Loan Fund

Physicians who know needy medical students interested in family practice should urge the students to contact Mediclinics Educational Foundation which provides loans which are interest free during the period of registration at medical school and through one year of internship. Students should write to: Mediclinics Educational Foundation, 930 Northwestern Bank Building, Minneapolis, Minnesota, 55402.

New Publications

The Information Center for Hearing, Speech and Disorders of Human Communication of the Johns Hopkins University has announced that a new publication, *Noise: Potential Danger to Man* is available for $3.00 by writing to Department DS, The Johns Hopkins University, 310 Harriet Lane Home, The Johns Hopkins Medical Institutions, Baltimore, Maryland, 21205. The book is a comprehensive bibliography offering references to books, monographs, reviews, and journal articles from 1960-1972.

A new magazine on the subject of clinical aspects of sports and physical fitness, entitled *The Journal of Sports Medicine,* is available through Sports and Medicine Publications, Inc., Brookfield Center, Connecticut, 06805.

CLINICAL NOTICES AND MEETINGS

Seminars on Ethics

The College of Medicine and Dentistry of New Jersey announces that four seminars on issues of ethics in biomedical sciences will be held at Rutgers Medical School Auditorium, University Heights Campus, Piscataway, New Jersey: April 11, "Informed Consent;" April 25, "Genetic Counseling;" May 9, "Definition of Death;" and May 30, "World Health Organization and Mental Health." For information write to: Armund E. Foley, Director of External Relations, College of Medicine and Dentistry of New Jersey, 100 Bergen Street, Newark, New Jersey, 07103.

AMA Congress on Environmental Health

The American Medical Association is sponsoring a Congress on Environmental Health April 29-30, 1973 at the Ambassador West Hotel, Chicago, Illinois. Registration fee is $50 (includes six sessions, two luncheons, and Congress papers). The theme will be Energy, The Environment and Human Health. Further information is available through Diane Dale of the Department of Environmental, Public, and Occupational Health, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610.

National League for Nursing

The National League for Nursing and the National Student Nurses' Association will hold their annual conventions concurrently May 6-10, 1973 in Minneapolis, Minnesota. For information contact either association at 10 Columbus Circle, New York, N. Y., 10019.

Heart Association Deadline

The American Heart Association has announced a May 25th deadline for submission of abstracts, scientific exhibits, and cardiovascular films for the 46th Scientific Session to be held in Atlantic City, New Jersey, November 8-11, 1973. Entries must be based on original investigations related to cardiovascular disease including renal, stroke, cardiopulmonary, thrombosis, and epidemiology. Official forms for submitting materials can be obtained from: Department of Medical Education, American Heart Association, 44 East 23rd St., New York, N. Y., 10010.

Surgeons' Postgraduate Courses

The Chicago Committee on Trauma of the American College of Surgeons announces its Seventeenth Annual Postgraduate Course on Fractures and Other Trauma, to be held at the Sheraton-Chicago Hotel, May 9-12, 1973. The course will feature Rocco A. Calandruccio, M.D. of the University of Tennessee, Memphis. Registration fee is $140. For information write: American College of Surgeons, 55 E. Erie Street, Chicago, Illinois, 60611.

Group Practice Regional Meeting

The Summit Medical Group, Summit, New Jersey, will sponsor the Northeast Regional Meeting of the American Association of Medical Clinics, May 18-19, 1973 at the Governor Morris Inn, Morristown, New Jersey. The two-day session, covering various phases of the group practice of medicine, will be open to all group practice physicians and administrators in the Region (Maine, Vermont, New Hampshire, Maryland, Ohio, District of Columbia, New York, Massachusetts, Rhode Island, and Delaware). For more information, call Anthony J. Milano, Administrator, at Summit Medical Group, (202) 273-4300.

Hawaii Annual Meeting

The Hawaii Medical Association will hold its 117th Annual Meeting, May 1-4, 1973 at the Llikai Hotel, Honolulu, Hawaii. The theme will be "Acute Medical Emergencies". Registration fee of $50 is required for non-members. Write to: Hawaii Medical Association, 510 South Beretania Street, Honolulu, Hawaii, 96813.

CLASSIFIED AD SECTION

Advertisements under the Classified Ad Section are charged at the rate of 30 words or less, set solid. One insertion $4.00. Call the Journal office, 658-7596 for further information or placement. All advertisements are payable in advance. The Editorial Board reserves the right to edit copy. Closing date for new copy is the first of the month for inclusion in the current issue.

Classified advertisements of a professional nature are free to members.

UROLOGIST: Completing 5-year urological training at State University of New York, Buffalo. Graduate of Kaohsiung Medical College, Kaohsiung, Taiwan, Republic of China. Interested in group practice. Available July, 1973.

OB-GYN: Graduate of School of Medicine, National Taiwan University, Republic of China. Completing residency at Boston City Hospital, Boston, Massachusetts. Interested in group practice. Available July, 1973.

OB-GYN: Licensed in Delaware. Board Eligible. Graduate of Cairo Medical School, Cairo, Egypt. Currently on staff of Raleigh Boone Medical Center, Whitesville, West Virginia. Available July, 1973. Interested in institutional or group practice.

GENERAL SURGEON: Board Eligible. Licensed in New York and Vermont (FLEX). Graduate of Baroda Medical College, Baroda, India. Interested in peripheral vascular surgery in hospital or private group practice. Available July, 1973.

PERIPHERAL-VASCULAR SURGEON: Graduate of University of Sheffield Medical College, United Kingdom. Currently Chief Surgical Resident at the Grace Hospital, Detroit, Michigan. Holds Michigan and Pennsylvania (FLEX) licenses. Interested in group or institutional practice. Available July, 1973.

GENERAL SURGEON: Graduate of Maharaja Sayajirao University Medical College, Baroda, India. Served general surgery and orthopedic residencies in England. Completing general surgery residency at Church Home and Hospital, Baltimore, Maryland. Available, July, 1973.

"UNWANTED HAIR PERMANENTLY REMOVED"

FRANCES B. AERENSON, R.N.

ELECTROLOGIST

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WILMINGTON, DELAWARE

Delaware Medical Journal

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TRANSURETEROURETEROSTOMY

Harold S. Rafal, M.D.

The management of the inadvertently damaged or deliberately transected ureter is an infrequent, albeit vexing, problem to a patient and surgeon. Transureteroureterostomy is the most commonly used name applied to the operation in which the end of the injured ureter is anastamosed into the side of the contralateral ureter. The procedure has a high incidence of reported success but a low incidence of acceptance.

Review of Literature

Sharpe in 1906 described the performance of transureteroureterostomy in cadavers.[1] It is interesting to note that the appearance of the completed operation as performed today does not differ significantly from that illustrated in Sharpe's paper. (Figure 1) He referred to the experiments of Boari and Casati in 1894 and of Monari in 1895.

In 1935, Higgins reported the first instance in which transureteroureterostomy was employed in a clinical problem.[2] The patient suffered severe right renal pain with urinary reflux. Previous operations had been performed on the right side of the bladder for infected diverticulum. Rejecting the sacrifice of the kidney by nephrectomy, wary of reimplantation of the ureter into the scarred and distorted right bladder, unwilling to implant the ureter into the rectum, Higgins performed transureteroureterostomy with excellent anatomic, radiologic, and clinical results. The closing sentence of his report stated, "Although such a procedure may seldom be indicated, it is an anatomic and physiologic possibility and adds another conservative technic to the armamentarium of urologic surgery."

Renewed interest in the procedure resulted from a report by Anderson, Hodges, Behnam and Ockar in 1960.[3] They believed that the procedure had been neglected in the treatment of unilateral renal disease because of "the rise in popularity of the use of the ileum." In a review of the literature, they encountered only ten other cases, reported in six separate reports (including Higgins'), all with apparently good clinical and urographic results. In this collective review, the largest series reported only five cases. The uniformly excellent results are probably misleading since it is unlikely that the occasional operator would report an isolated instance of failure. They operated upon seven cases over a period of six years with "gratifying results," which were confirmed by radiologic and clinical evaluation. Their closing statement was "A plea is

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Dr. Rafal is a senior member of the Department of Surgery, Wilmington Medical Center.

made to encourage the use of this procedure, since the authors feel that the apprehension that the normal ureter may be damaged is unwarranted."

In 1963, Hodges, Moore, Lehman and Behnam reported a follow-up of these seven cases and twenty-five additional cases.[4] Of the 32, eight had died, six of malignant disease, one of myocardial infarction, and one of bacteremic shock secondary to pyelonephritis, secondary to nephrolithiasis.

Further endorsement of the procedure appeared in a report by Jacobs, Politano and Harper, who added nine successful cases.[5] In one of the cases these authors reported, a hydrocephalic patient developed meningitis after ventriculoauricular shunt and required reshunting to the right kidney. Instead of sacrificing the right kidney, a right to left transureteroureterostomy was performed. Though the patient succumbed to a second episode of meningitis, the postoperative I.V.P. was normal, and there were no symptoms referable to the urinary tract. They urged wider application of the method.

An interesting study by Boyarsky et al compared transureteroureterostomy with bifid ureters.[6] Noting that the patients with bifid ureters have a slightly higher incidence of infection and stones, Boyarsky studied the problem in dogs. It was observed that after transureteroureterostomy some degree of persistent dyskinesia at the site of anastomosis, with to and fro peristalsis, retrograde peristalsis, and flow of urine from one limb into the other would occur. This held true in the presence or absence of stricture.

Weems combined transureteroureterostomy with the use of a bladder flap in the management of bilateral distal ureteral stricture and unilateral uretero vaginal fistula.[7] This combined maneuver restored satisfactory drainage of the upper urinary tracts, cured the fistula, and preserved the use of the bladder.

I. Smith noted that other methods of management carried a poor prognosis statistically whereas transureteroureterostomy has had almost uniformly good results.[8] This series included several cases in which transureteroureterostomy was employed for immediate reconstruction during resection of extensive pelvic malignancy. In summarizing the indications for transureteroureterostomy, the procedure was suggested for restoration of urine flow after simple subtotal ureterectomy for malignancy of the ureter, if the surgeon considered subtotal ureterectomy as adequate therapy.

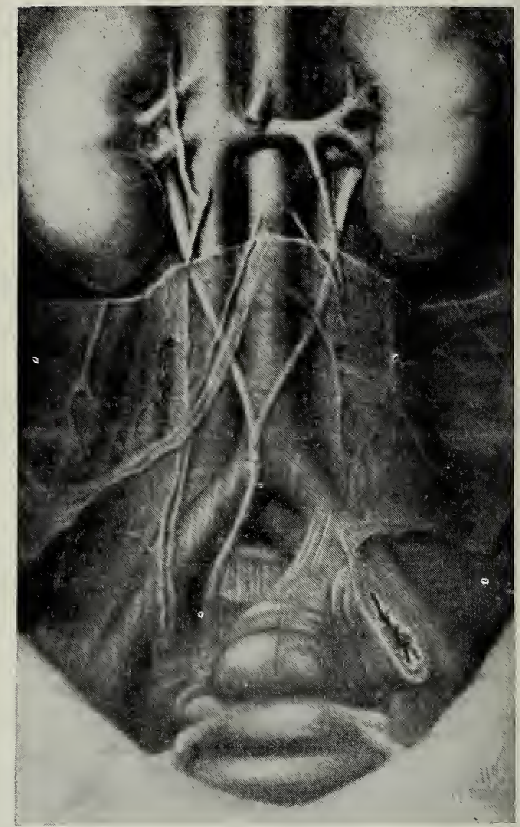

Figure 1—Reproduction of illustration of transureteroureterostomy in cadaver (Sharpe, N. W., An Surg 1906). The appearance of the completed anastomosis as illustrated has not changed. (Courtesy of Annals of Surgery)

Weiss, Beland and Lattimer recommended transureteroureterostomy in combination with cutaneous ureterostomy in children with long, thick-walled, tortuous ureters as an excellent means of supra-vesical urinary diversion.[9]

Shafik, though indicating a preference for a double-barreled cutaneous ureterostomy, found transureteroureterostomy useful when the double-barreled technique was not feasible.[10] Most of his patients were treated for Bilharzial bladder cancer.

Case Reports

Case I

E.B., a 40-year-old woman, was found to have epidermoid cancer of the cervix, Stage 1, in January, 1966. At that time, she was 14 weeks pregnant. Treatment consisted of hysterotomy, intracavitary radium, and external radiation in the sequence stated and was completed in March, 1966. Eight months later she was re-admitted because of vaginal bleeding which persisted after transfusions of eight units of whole blood. Cessation of hemorrhage followed bilateral hypogastric artery ligation. However, during a subsequent vaginal examination, there was a recurrence of brisk hemorrhage, which was controlled by a hemostatic clamp applied per vagina and left in place. Hemorrhage did not recur when the clamp was removed. She was discharged following removal of the clamp. On the day after discharge she noticed a profuse watery discharge, which was proven to be the results of a uretero-vaginal fistula. (Figure 2) Though pelvic examination revealed marked induration, vaginal biopsy revealed no malignncy.

On August 1, 1967, left-to-right end-to-side transureteroureterostomy was performed. On the ninth postoperative day back pain, chills, and fever occurred. These symptoms disappeared after the removal of the bladder catheter and the administration of furadantin. She was discharged on August 13, 1967. Intravenous pyelography performed on the ninth postoperative day revealed moderate to marked hydronephrosis, which was to be expected in the early postoperative period. When intravenous pyelography was repeated six months after transureteroureterostomy, the left calyceal system was entirely normal. (Figure 3) The right calyceal system revealed minimal hydronephrosis, which the radiologist considered to represent improvement when compared to the moderate hydronephrosis existing prior to ureteroureterostomy.

Comment: In this case, severe pelvic fibrosis due to radiation, surgery, and infection were considered to represent a contraindication to any procedure requiring anastomosis with the bladder. A highly satisfactory urographic and clinical result was obtained by transureteroureterostomy.

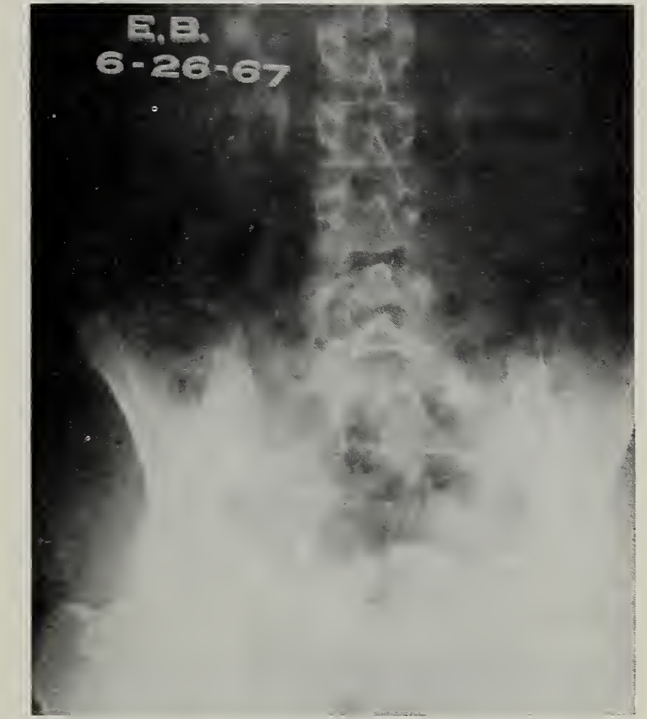

Figure 2—Case 1, E. B., Preoperative pyelogram

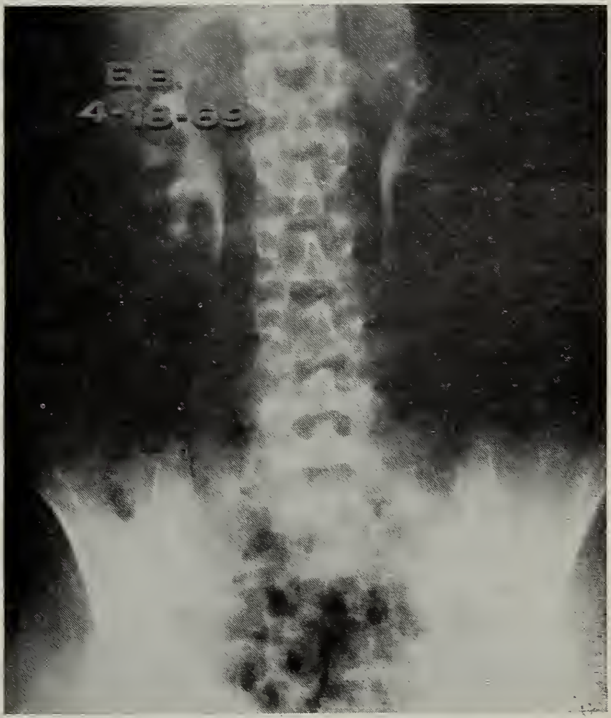

Figure 3—Case 1, E. B., Postoperative pyelogram

Case II

A.C., a 38-year-old woman was admitted to the hospital on August 9, 1967, with the chief complaint of leakage of urine through the vagina. Three months prior to this admission, hysterectomy had been performed for endometriosis. Leakage of urine from the vagina was noted on the fifth day after hysterectomy and persisted until the time of the second admission.

Indigo carmine instilled into the urinary bladder did not appear in the vaginal discharge. When the dye was given by the intravenous route, it did appear in the vaginal discharge. Cystoscopy was performed on August 10, 1967 and only mild inflammation was seen in the bladder and no fistula was found. A ureteral catheter was passed to the right kidney with ease, but attempted catheterization of the left ureter showed obstruction 9 cm above the bladder, and the injection of dye gave radiographic evidence of uretero-vaginal fistula. (Figure 4)

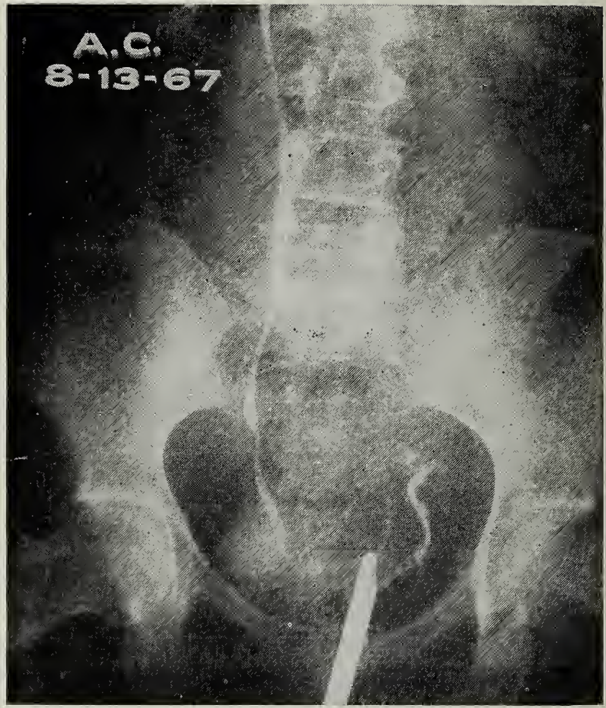

Figure 4—Case 2, A. C., Preoperative retrograde pyelogram

Operation was performed on August 11, 1967. A determined effort to free the left ureter for repair or reimplantation into the bladder was thwarted by dense fibrosis in the left pelvis. Accordingly, left to right transureteroureterostomy was performed and accomplished with ease. Indigo carmine was given by intravenous injection at the completion of the anastomosis and was seen coming down the normal right ureter. There was no leakage of the dye at the anastomosis.

The postoperative course was satisfactory with prompt restoration of oral alimentation. The vaginal urinary discharge disappeared immediately. No urinary discharge appeared at the site of the retroperitoneal drain, which had been placed in the vicinity of the anastomosis, and it was removed on the seventh postoperative day.

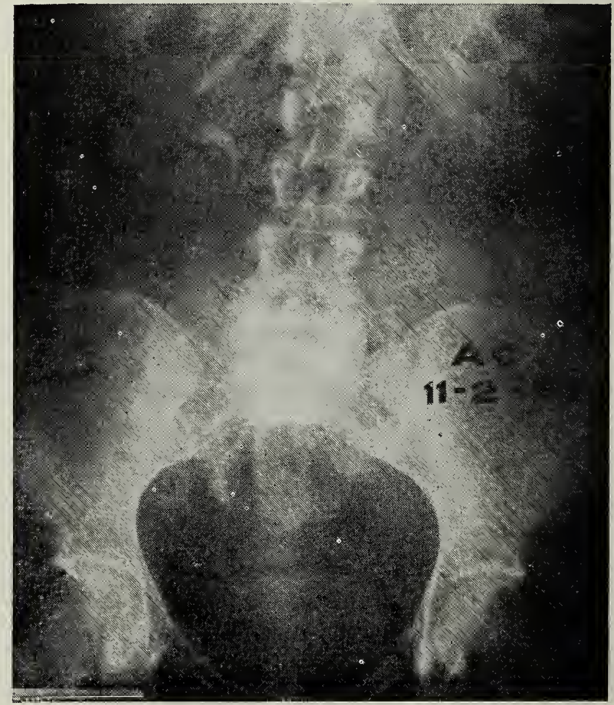

Figure 5—Case 2, A. C., Postoperative intravenous pyelogram

Intravenous pyelography on November 2, 1967, showed essentially normal architecture of both kidneys. (Figure 5)

Comment: In this instance, re-implantation of the ureter was the preoperative preference. Resort to transureteroureterostomy resulted from technical difficulties encountered. Once the decision was made, transureteroureterostomy was rapidly accomplished.

Case III

H.H.J., a 60-year-old white man was admitted to the hospital on May 11, 1968. His chief complaint was burning on urination and frequency of micturition of nine months' duration. Concomitantly, he experienced a sense of perineal pressure and frequency of stools. For about one month he had noted slight to moderate swelling and discomfort of the right testicle. The stools were frequently watery, occurring as often as every one and a half to two hours. However, occasionally the stools were noted to be very small, hard, and broken up. There had been no blood, pus, or mucus in the stools. The patient had noticed that he had occasionally passed "bubbles" in his urine and that occasionally the urine appeared "like coffee with cream." Chills had been frequent. He had lost 40 pounds in weight though he had regained about ten pounds.

The urinary symptoms and infection had proven to be resistant to medical treatment. Studies had been performed in his home community. Cystoscopic examination, done several months prior to admission, was reported as revealing "trabeculation and cystitis." A recent intravenous pyelogram was reported as showing normal upper urinary tract architecture but suggested a pressure defect on the left lateral wall of the bladder. (Figure 6)

On the day prior to admission a barium enema was performed, and the contrast medium did not pass beyond the sigmoid colon.

System review and past history were noncontributory.

Physical examination revealed a mass in the suprapubic area, which measured about 10 cm, was moderately tender and was only slightly movable. The right testicle was enlarged to twice normal size and was non-tender. Sigmoidoscopic study and biopsies revealed a 2 cm sessile, polypoid growth at 10 cm which was reported to be "hyperplastic adenomatous polyp." There were an abnormal appearing mucosal lesion at 15 cm, which was reported as "minimal chronic inflammation," and a 1 cm lesion at 15 cm, which was reported as benign polyp fragment."

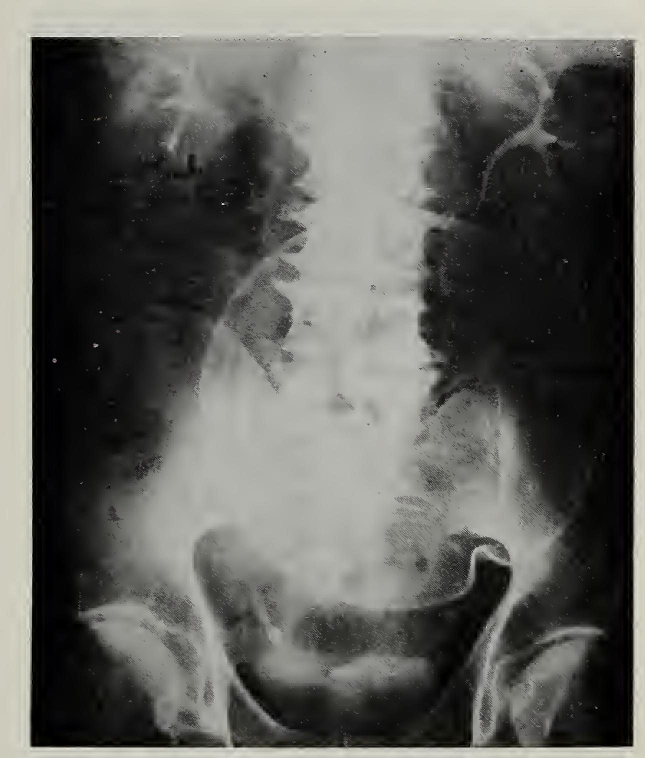

Figure 6—Case 3, H. H. J., Preoperative intravenous pyelogram

Laboratory data: Hb 13.7, Hematocrit 42%, WBC 10,300 with 50 segmented neutrophils, 2 non-segmented neutrophils, 45 lymphocytes, 1 monocyte, and 2 cosinophils.

The urine revealed 3+ albumin, innumerable WBC, and no evidence of vegetable or meat fibers. Urine culture revealed E coli.

The serum alkaline phosphatase was 3/1 units/ml, sodium 145 mEq/liter, and potassium 4.0 mEq/liter. Chlorides were 102 mg/100 ml, B.S.P. 20.8%, and VDRL negative.

Intravenous pyelography and cystoscopy were not repeated. The preoperative chest x-ray, EKG, and blood volume studies were within normal limits.

Operation was performed on May 17, 1968. The polyp at 10 cm was still considered to be suspicious despite the absence of malignant cytologic features in the initial biopsy. Accordingly, after the induction of anesthesia, the patient was placed in the left lateral Sims position and the rectal polyps totally excised with the electrocautery and submitted for frozen section examination. The lesion of 10 cm from the anal sphincter was reported as invasive cancer.

The patient was then prepared and draped for concomitant abdominal and perineal exposure. The abdominal findings at laparotomy confirmed infiltration of the lesion into the anterior peritoneum and rectus sheath in the suprapublic area. In order to proceed with evaluation of potential for resectability, it was necessary to excise an area of the peritoneum and posterior rectus sheath, which extended three to four centimeters in either direction from the mid-line and for 8 cm cephalad from the pubis. General abdominal exploration was negative for metastatic tumor above the pelvis. No definitive lesion was palpable in the proximal colon. A bulky carcinoma originating in the sigmoid colon had invaded the bladder, forming a fistula. Subsequent examination of the resected specimen revealed an additional 2.2 cm cancer four cm proximal to the large lesion as well as three additional polypoid structures.

Twenty-seven lymph nodes were found in the resected specimen; none was involved by metastatic cancer.

In order to achieve a potentially curative resection it was necessary to resect a segment of colon extending from the middle descending colon distally to within 4-5 cm of the anal sphincter in continuity with 2/3 of the bladder, including all of the fundus and the left lateral wall and base and a segment of the left ureter. The remaining bladder wall was edematous and indurated. Restitution of colonic continuity was achieved by ligation and division of the inferior mesenteric artery at its origin with mobilization of the splenic flexure. These maneuvers yielded adequate mobility so that the descending colon could be pulled through the intact digitally dilated sphincter in order to be sutured to the perianal skin. Left to right transureteroureterostomy was performed. At the completion of the transureteroureterostomy, indigo carmine was administered by intravenous injection. When reconstruction of the bladder was then undertaken, blue dye was observed entering the bladder remnant, and no leakage of dye occurred to the transureteroureterostomy anastomosis. After reconstruction of the bladder remnant, a cystotomy tube was inserted into its lumen. In order to achieve effective abdominal closure, a tailored segment of stainless steel mesh was employed to replace that segment of the abdominal wall which had been resected with the specimen.

The operative procedure was prolonged but well tolerated. The postoperative course was complicated by urinary and fecal drainage and upper gastrointestinal hemorrhage. It was assumed that the urinary drainage originated from dehiscence of the repair of the bladder remnant and the fecal drainage from temporary retraction of the colon pull-through (which was retrieved through a proctoscope and resutured to the perineal skin). Upper gastrointestinal x-ray examination performed after spontaneous cessation of the upper gastrointestinal hemorrhage revealed gastritis.

Despite the harrowing postoperative course, the patient was discharged on the twentieth postoperative day. At the time of discharge he was afebrile. There was no urinary or fecal fistula, and he had both urinary and fecal continence.

In January, 1969, he had gained approximately 40 pounds in weight and was asymptomatic. Intravenous pyelography six months later revealed normal pelvio-calyceal architecture. (Figure 7)

Comment: In this case, the management of the transected ureter was of relatively secondary importance. The time-consuming and difficult technical maneuvers necessary to effect an adequate cancer resection dictated a reconstruction which was as rapid and atraumatic as possible. Since dissection had already provided excellent exposure and mobility of both ureters, transureteroureterostomy required the placement of about eight sutures and was accomplished rapidly and with ease. Repair of the bladder and the maneuvers required for the pull-through procedure and for

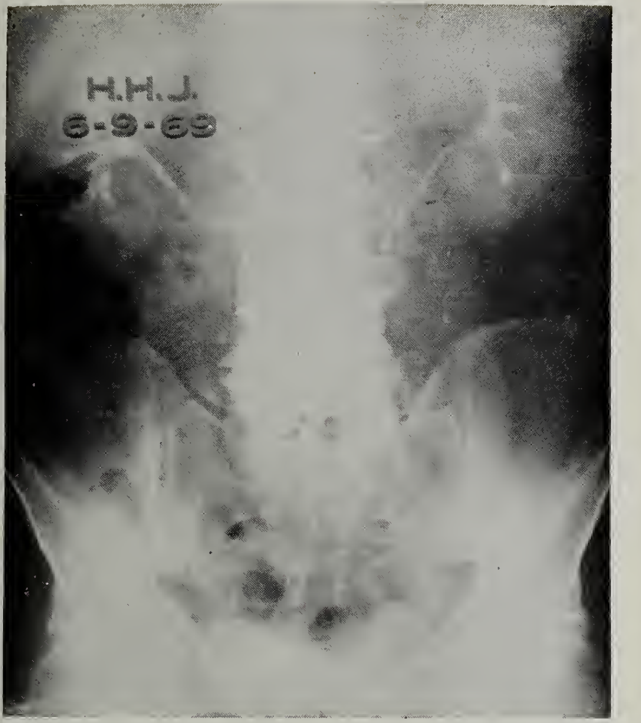

Figure 7—Case 3, H. H. J., Postoperative intravenous pyelogram

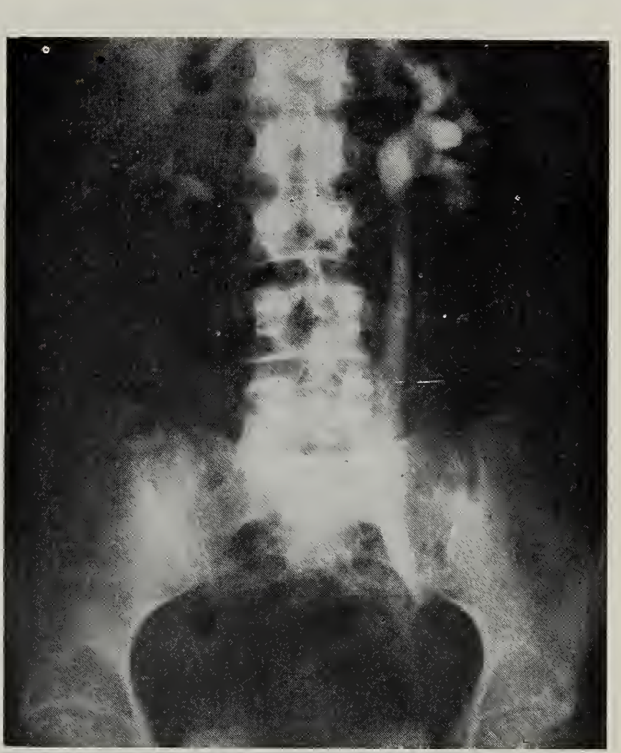

Figure 8—Case 4, M. A. F., Preoperative intravenous pyelogram

the abdominal wall closure were much more time-consuming. All alternatives to transureteroureterostomy carried intrinsic risks of their own and would have required much more time and surgical trauma with the exception of ligation of the ureteral stump. However, in the presence of a vesico-colic fistula and infected urine, ureteral ligation appeared to be an invitation to ascending infection, pyelonephritis, and secondary nephrectomy. Though the postoperative course was hectic, it was the clinical judgment of the attending physicians that none of the complications could be ascribed to transureteroureterostomy. At the time of writing, two and a half years after operation, he is receiving chemotherapy for liver metastasis. He is free of pain and functioning well. There is no evidence of pelvic recurrence of cancer nor any urologic difficulty.

Case IV

M.A.F., a 46-year-old woman was admitted on March 3, 1970, with the chief complaints of recurrent left lower quadrant pain and gradual change in bowel habits of three months' duration. A weight loss of eight pounds was recorded by the patient in spite of her excellent appetite.

She had been in good health until the onset of her manifestations three months prior to her admission. Except for an abdominal hysterectomy, performed for benign uterine disease in January, 1969, no past history of significance was obtainable.

On pelvic examination, a mobile, hard pelvic mass measuring approximately six to eight cm was palpable through the vaginal vault to the left of the mid-line.

Barium enema revealed a constrictive lesion of the upper sigmoid colon, and intravenous pyelogram demonstrated the presence of left hydronephrosis and hydroureter. (Figure 8)

On March 6, 1970, en bloc resection of the pelvic colon, left half of the bladder, upper third of the vagina, and an eight cm segment of the distal left ureter was performed. Intestinal continuity was re-established by end-to-end anastomosis, and the bladder was reconstructed. Because of the large segment of ureter resected, bladder re-implantation was impossible and ureteroureterostomy was perperformed.

On the second postoperative day the urinary output through the cystostomy tube decreased and drainage from the pelvic sump increased. Indigo carmine given intravenously was seen to drain through the sump drain.

By the fourth postoperative day no urinary leakage could be demonstrated after intravenous injection of indigo carmine. The dye was collected only from the cystostomy tube.

Intravenous pylelogram done on March 24, 1970, demonstrated improvement of the left hydronephrosis and dilatation of the right ureter with minimal right hydronephrosis.

The patient was discharged on March 26, 1970, after removal of cystostomy tube and reestablishment of normal bladder function.

On March 30, 1970, the patient was re-admitted with a picture of partial small intestinal obstruction and encapsulated pelvic urinary collection. She was treated with intestinal intubation and an indwelling Foley catheter.

The pelvic urinary collection drained spontaneously through the cystostomy drain tract, the intestinal obstruction was relieved by the intestinal tube, and all symptoms disappeared. She was discharged on April 10, 1970, with the Foley catheter in place. The catheter was removed two weeks later. She remained asymptomatic and gained weight.

Because of dye hypersensitivity, retrograde pyelogram was performed on July 24, 1970. Improvement of the left hydronephrosis was evident at this time, and the minimal hydronephrosis of the right side observed during the previous study had not progressed. (Figure 9) The apparent dilatation seen in this study, including that of the right ureter *distal* to the anastamosis, is a result of retrograde injection with pressure. The patient required reoperation on September 3, 1970, because of recurrence of malignancy at the colonic suture line which was discovered on routine sigmoidoscopic examination but which was asymptomatic. She recovered from surgery after a stormy postoperative course and was then given postoperative radiation therapy to the pelvis for probable occult residual disease.

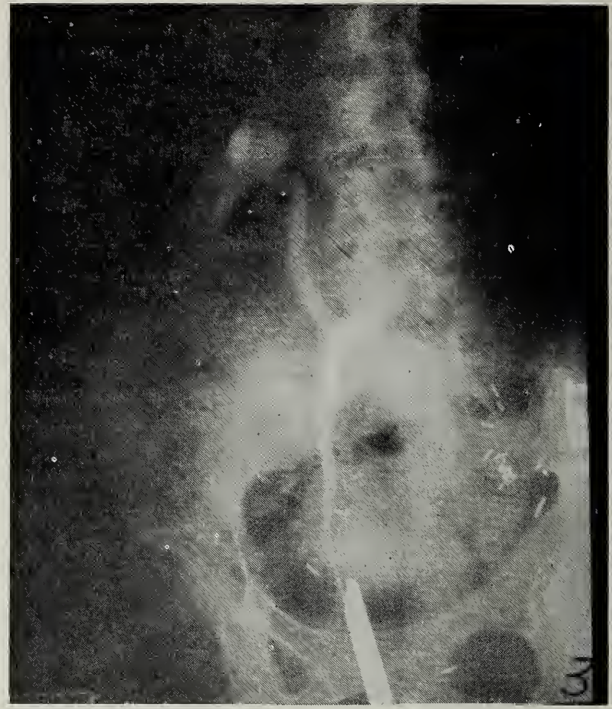

Figure 9—Case 4, M. A. F., Postoperative retrograde pyelogram

Because of dye sensitivity, retrograde pyelography was performed. The apparent dilatation is ascribed to injection pressure. The caliber of the right ureter **distal** to the anastomosis is the same as the ureter proximal to the anastomosis.

Comment: In this case ureteral obstruction was evident preoperatively, and although the bladder was not considered to be involved by cystoscopic examination, re-implantation of the ureter and the possibility of transureteroureterostomy were considered preoperatively.

Case V

O.M.M., a 55-year-old woman was admitted on January 6, 1969, with the diagnosis of recurrent carcinoma of the cervix.

In September, 1962, internal radium application and external irradiation were used for the treatment of a epidermoid carcinoma, grade II-III, of the cervix.

She had been asymptomatic and without evidence of recurrence until October, 1969, when she developed irregular vaginal bleeding. On pelvic examination, tumor involvement of the vaginal vault, the upper third of the vagina, and marked induration of the para-vaginal tissues extending laterally to the pelvic wall were found.

The patient was obese and had a large, irreducible, non-obstructed umbilical hernia. Radiation pigmentation and induration of the lower abdominal wall were present.

On January 10, 1969, abdominal exploration revealed extension of the tumor to the sigmoid colon, bladder, and left lateral pelvic wall. Attempts to develop a dissection plane free of tumor on the left side failed, and the left ureter was found to be markedly dilated, estimated to be 1.5 cm in diameter.

Upon investigation of the small intestine, two areas of stenosis and thickening were encountered, approximately 1.0 cm in width, where the serosa was somewhat shaggy. This was interpreted as being a possible area of radiation reaction.

Since a surgical cure was impossible, relief of the urinary tract obstruction was sought by performance of ureteroureterostomy. The dilated left ureter was transected above the area of obstruction and brought retroperitoneally to the right side where an end-to-end anastomosis with the right ureter was performed. The umbilical hernia was repaired as part of the abdominal incision and exposure.

Bilated ligation of the internal iliac and ovarian vessels was performed to obviate or minimize vaginal bleeding. The operation was well tolerated.

During the first two postoperative days (POD) virtually no urine was obtained from the bladder catheter, and urinary drainage through the abdominal drains was observed. A gradual reversal of these observations occurred over the course of the third to eighth POD, so that on the eighth POD, 1240 cc were obtained from the bladder and minimal drainage from the abdominal drains. By this time a peritoneal recovery was present, and the patient tolerated a soft diet. Except for a temperature elevation to 101° on the 4th POD the vital signs were normal. Unfortunately, no BUN or creatinine determinations were done during this postoperative interval of urinary leakage followed by steady clinical improvement. On the 11th POD the temperature rose abruptedly to 102° accompanied by a rapid irregular pulse, hypotension, and marked abdominal distention. The urine output fell to 125 cc for that day. BUN determination on that day was 148 mg/100 ml, indicating that a significant degree of uremia had been present prior to the dramatic clinical manifestations.

Treatment was instituted on the presumption of septicemic shock, but the patient did not respond. For the remaining three days of life, the urine output did not exceed 170 ml per 24 hours. Massive upper G.I. hemorrhage and a diffuse bleeding diathesis occurred during the 14th POD, the day of death.

At autopsy, 200-300 ml of turbid hemorrhagic fluid were found in the pelvis. Intestinal loops, especially of ileum, were matted together and adherent in the pelvic region. On separation of these loops, a few pockets containing yellowish-green exudate were noted. The loops of involved small intestine were friable and the serosal surface covered with fibrinous exudate. One small opening in the ileum was found.

The calyceal system and pelvis of the right kidney were not remarkable. The parenchyma appeared swollen and reddish-brown, and the cortico-medullary demarcations were well outlined. The cortical surface of the left kidney had a similar appearance, and the left calyceal system contained a small number of golden yellow crystals and a small amount of turbid fluid. A detailed description of the uretero-ureteral anatomosis was not given. However, the following statements were made:

"The right ureter is identified and followed in its course. In the pelvic region, it is surrounded by what appears to be some indurated tissue, but the ureter is patent down to the bladder. There is no evidence of dilatation on this side."

Microscopic examination revealed identical

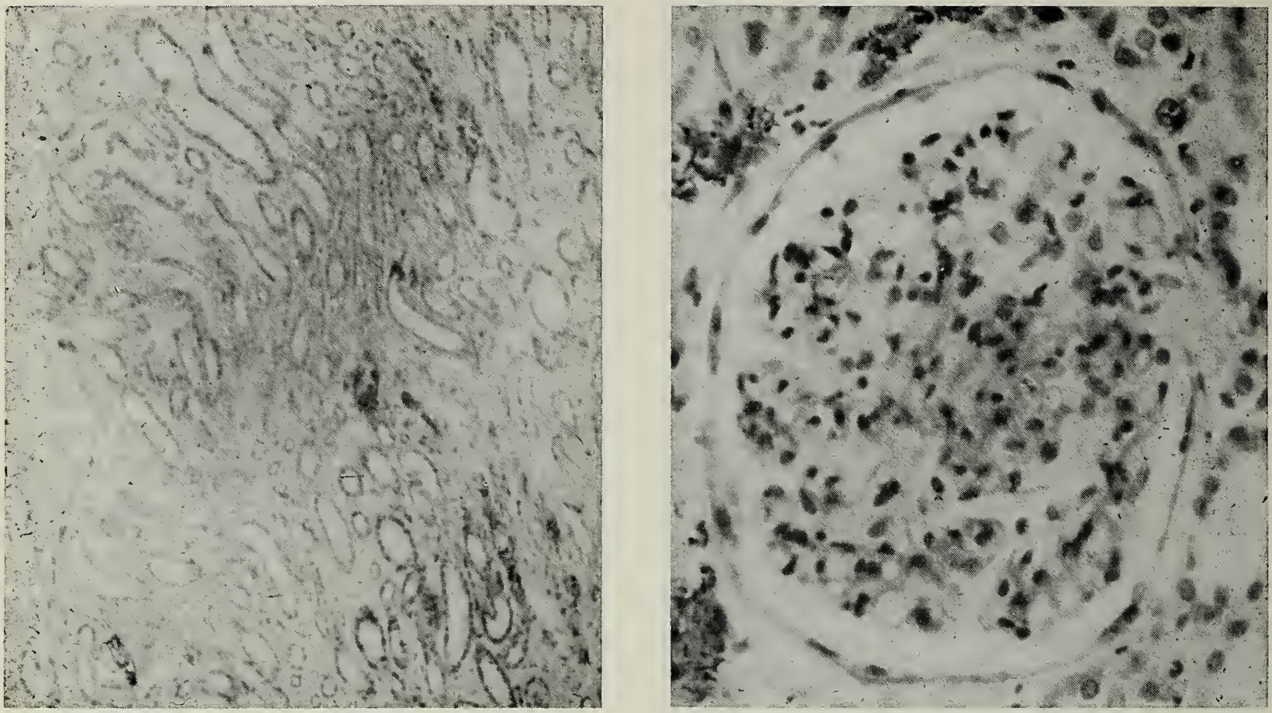

Figure 10 and 10A— Case 5, O. M. M., Sections from kidney at autopsy. No pyelonephritis or tubular dilatation. Occasional red blood cell cast and hemoglobin cast in renal tubules.

findings in both kidneys. There was no evidence of inflammatory cells, which would be expected in pyelonephritis. The glomeruli were normal. However, plugs of red blood cell casts and hemoglobin casts were present throughout the renal tubules. (Figure 10-10A)

Comment: The wisdom of urinary diversion in a patient with recurrent and uncontrollable pelvic cancer is a moot point. Death from uremia may well be the least agonizing mode of exodus for such an unfortunate individual. On the other hand, should severe complications subsequently ensue from the obstructed ureter and kidney, additional surgical intervention might be necessary under even worse clinical conditions and would require a more distressing procedure such as nephrostomy. However, since this paper addresses itself to the anatomical and physiological aspects of transureteroureterostomy, to cavil this point of surgical philosophy is of peripheral relevance.

Clinically, the postoperative course was notable for profuse urinary extravasation and the absence of bladder urine followed by a reversal of these features and marked clinical improvement. A castastrophic event on the 11th POD progressed to death by the 14th POD. At autopsy, no evidence of ureteral dilatation or intra-peritoneal urinary leakage of pyelonephritis was found. These findings indicate that the transureteroureterostomy was technically successful. However, the BUN was 148mg/100 ml on the day of onset of the clinical catastrophe, indicating that impaired renal clearance had been present prior to this event. From the available data, it is difficult to ascertain whether the elevated BUN at this point was due to mechanical obstruction which had resolved by the time of autopsy, or due to a tubular insult which had occurred without prior recognition, or a combination of both. Likewise, the tubular pathology described on microscopic examination of the kidneys postmortem may have occurred both before and/or after the 11th postoperative day. It would appear probable that a perforation of the ileum, possible on the basis of radiation changes, produced pelvic peritonitis, ileus, distention, septicemia, and additional renal insult.

A detailed description of the anatomic condition of the ureteroureterostomy was not available in the autopsy protocol. Therefore, the question must be raised though it cannot be answered with confidence, whether the absence of dilatation of either ureter at autopsy is adequate proof of the technical success of the transureteroureterostomy.

Ureteral dilatation is a function of hydrostatic pressure. In the presence of profound oliguria resulting from renal parenchymal insult, no urine is available to produce this increase in hydrostatic pressure. It is our conclusion, however, that the fairly satisfactory daily urinary volume noted for five to six days prior to the clinical catastrophe would have produced hydroureters had a stricture at the uretero-ureteral anastomosis been present and that this finding would still have been in evidence at the autopsy performed four days later.

Case VI

M.B., a 54-year-old woman, presented herself to the gynecologic service with a left lower quadrant mass and left lower quadrant pain. In December, 1970, she was operated upon and found to have a tumor of the sigmoid colon adherent to the dome of the bladder and the left pelvic wall. The abdomen was closed, and she was referred to the surgical service. A barium enema x-ray examination confirmed the presence of a constricting lesion of the sigmoid colon. Intravenous pyelography in March, 1971, was interpreted as revealing minimal blunting and dilatation of the lower pole calices of the left kidney and the upper pole calices of the right kidney. Re-exploration was undertaken in March, 1971. The delay was caused by the patient's refusal to accept another operation until persistent left lower quadrant abdominal pain became more severe. Again, a mass was found involving the sigmoid colon and attached to the left lateral pelvic wall, the dome of the bladder, the uterus, and the left fallopian tube. No palpable or visible hepatic metastases were found. Enlarged para-aortic nodes and gallstones were detected. A biopsy of several para-aortic nodes were found to be free of tumor on microscopic examination. Because of adherence of the tumor to the left lateral pelvic wall, a plan of combined radiation and surgical therapy was evolved. Between April 12, 1971, and May 7, 1971, the patient received 4,000 rads through the pelvis, using a four fields technique. Re-operation was planned and scheduled three weeks after completion of radiation therapy. However, acute sigmoid obstruction occurred prior to this set date and required decompressive transverse colostomy on May 29, 1971. Intravenous pyelography was repeated on June 4, 1971. (Figure 11) On June 10, 1971, definitive surgical extirpation of the lesion was performed under general anesthesia. No evidence of spread of tumor out of the pelvis was discovered. Planes of the dissection free of tumor were developed. The left ureter was found to enter into the tumor mass. En bloc resection included the distal colon, the uterus and adnexae, most of the fundus of the urinary bladder, and the distal left ureter. The transected left ureter was too short to implant into the reconstructed bladder. End-to-side, left-to-right, transureteroureterostomy was performed using six through and through sutures of #5-0 chromic catgut. No stent or splint was employed. Indigo carmine was injected intravenously immediately after completion of this anastamosis. The dye was seen traversing both ureters, and no leak was seen at the anastamosis. Furthermore, as repair of the fundal bladder defect was performed during the next step in re-construction, the blue dye was seen to enter the bladder. Colon continuity was restored with one row of #3-0 black silk gastrointestinal sutures. The previously constructed transverse colostomy was not disturbed. A supra-pubic cystostomy was established.

The immediate postoperative course was auspicious, but a prolonged complicated sequence of events ensued. The major puzzling feature was intermittent distention and abdominal pain, requiring repeated gastrointestinal intubations despite the free passage of flatus and stool from the colostomy, and, subsequently, from the rectum. Barium enema x-ray revealed no evidence of leakage at the anastomic site. On June 22, 1971, approximately 12 days postoperatively, an intravenous pyelogram was found to be within normal limits. (Figure 12) Gastrointestinal hemorrhage of a massive degree appeared dramatically, accompanied by marked abdominal distention and severe acute respiratory embarrassment. Emergency tracheostomy, followed immediately by emergency laporatomy, failed to save the patient. A large ulcer of the cardia of the stomach was present. Gas bubbles were present in all the veins visualized during the abdominal surgery. Under the direct observation of the operating team, a rapidly progressive loss of visibility of the intestinal tract was observed requiring the resection of most of the small bowel and the right half of the colon. The patient died shortly thereafter.

At autopsy, the residual small bowel was distended and the wall crepitant, "as seen with gas forming organism." The intestinal anastamosis was intact. A disruption in the bladder suture line was found, but this had been created during the last emergency operative intervention. The ureters were "slightly dilated and there is an anastamosis of the left ureter into the right side of the right ureter." (Figures 13 and 14) A small abscess in the cortex of the left kidney was found. No metastatic disease was discovered.

The lungs each weighed 500 gm, the lower lobes were completely atelectatic with focal areas of atelectasis in the *rest* of the lungs as well as marked congestion and edema. Blood cultures subsequently isolated E coli.

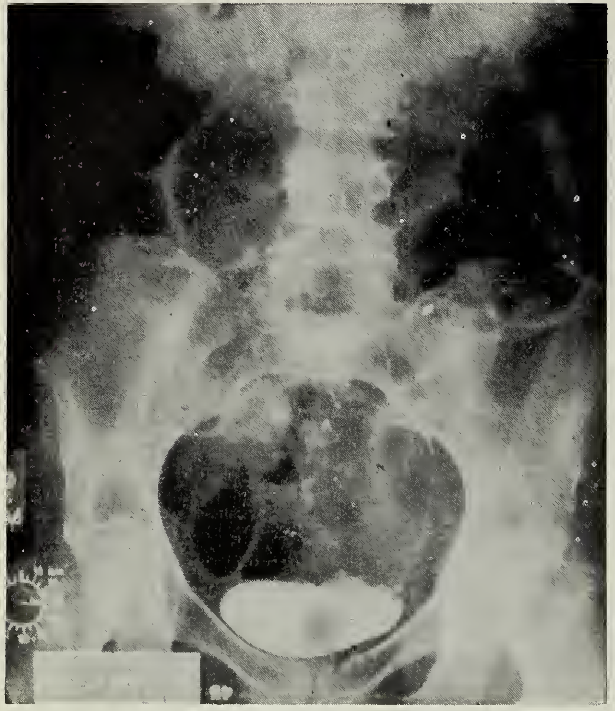

Figure 11—Case 6, M.B., Preoperative intravenous pyelogram

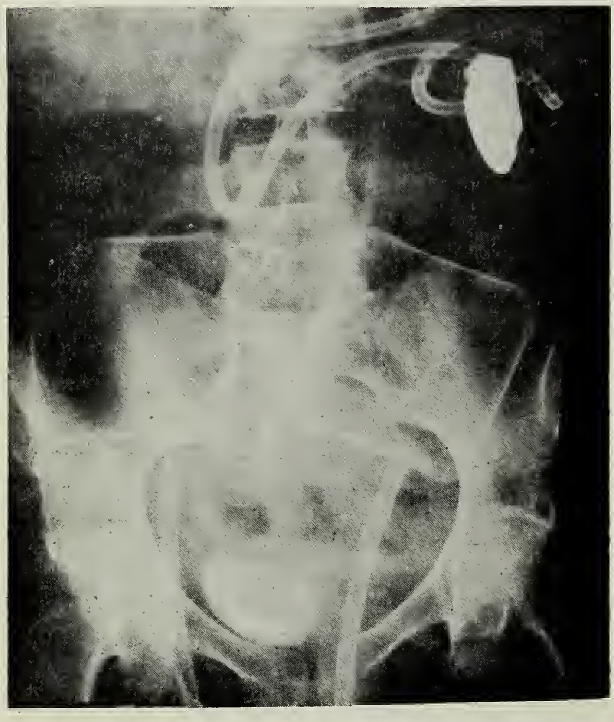

Figure 12—Case 6, M. B., Intravenous pyelogram, 12th postoperative day. Note deficit of left side of bladder because of resection.

Discussion

Though first proposed by Sharpe in 1906 and performed on a patient by Higgins as early as 1935, transureteroureterostomy has been employed rather infrequently in the management of the transected ureter. Surgeons have been reluctant to employ the procedure because of the potential hazard to the opposite ureter and kidney through technical failure and/or the introduction of infection into the contralateral renal unit. Other possible drawbacks are: (1) the possibility of one renal calculus obstructing both kidneys if it impacts at or distal to the anastomosis in passage and (2) compression of the anastomosis by the enlarging uterus during pregnancy.

The adventages of the procedure are (1) the ease of performance despite great care required in details of execution, (2) the availability of relatively normal tissue for anastomosis and healing in the event of fibrosis and infection in the pelvis, and (3) the uniformly good results reported by its proponents .

Transureteroureterostomy was the sole surgical maneuver required in only three of the cases herein reported. In one of these, it was performed for palliation in a patient with nonresectable malignancy and radiation changes of the bowel. In three of these cases, transureteroureterostomy was employed for urologic reconstruction after resection of multiple organs as indicated in the presence of bulky pelvic malignancies. Evaluation of the procedure in those cases with advanced malignancy is often difficult since it is a relatively minor part of the total operation. The magnitude of the operation and the complexities introduced by the other urologic, gynecologic, and intestinal extirpative and reconstructive maneuvers contribute to the obfuscation. The two deaths reported in the series were not related to the transureteroureterostomy. In no case did a major complication result from transureteroureterostomy *per se.* Clinical or autopsy data proved technical success in each case.

Conclusion

As a method of management of the severed and shortened ureter, transureteroureterostomy can be expected to yield uniformly satisfactory results.

Since submission of this report, two additional patients have been treated by transureteroureterostomy with good clinical and radiologic results.

ACKNOWLEDGEMENT

I am most grateful to Harry Repman, M.D. and Leslie Whitney, M.D. for allowing me to include details of their patients.

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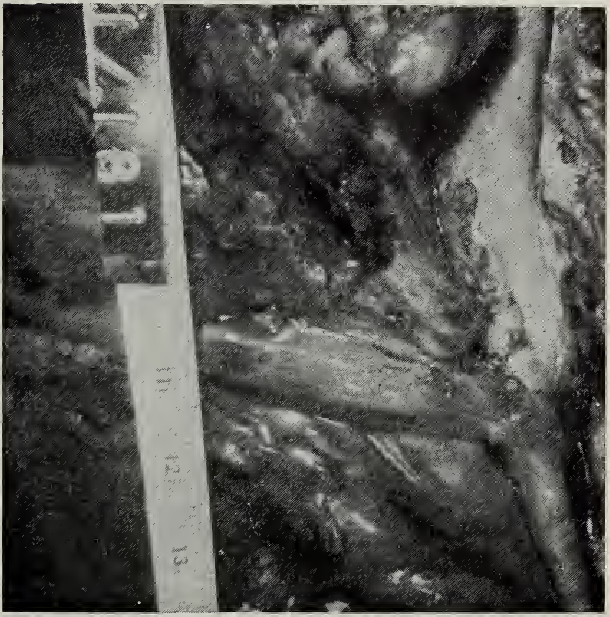

Figure 13—Case 6, M. B., Autopsy; adventitia removed from proximal right ureter only; ureters not opened.

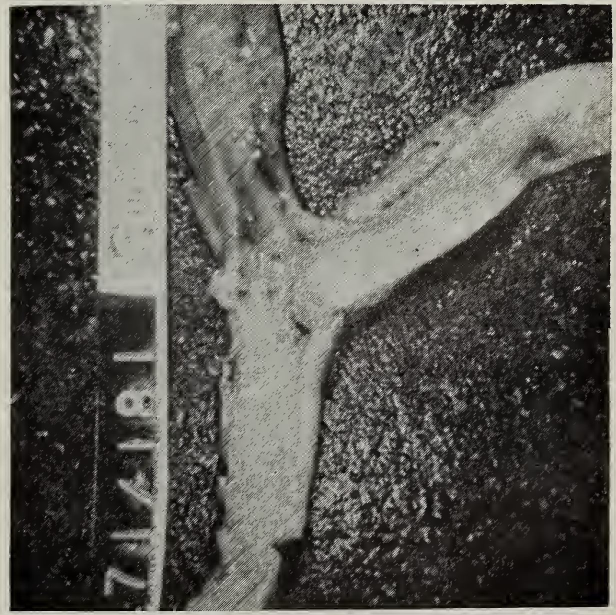

Figure 14—Case 6, M. B., Autopsy; ureters opened and anastomotic junction visible; no dilatation present.

WHAT'S WRONG WITH MEDICAL EDUCATION?

Donal F. Magee, M.D., Ph.D.

What's Wrong with Medical Education?

In my view, the major faults are that it takes too long and costs too much. This criticism applies equally to all the professional education in the United States. The quality of medical education until recently was good, for the most part, except for therapeutics. There is now good evidence that many physicians are incapable of evaluating and making intelligent choices of drugs. Uncritical acceptance of the advertising of the major drug companies has been all too common.

The practice of medicine suffers from other defects such as poor delivery, high cost and shortage of physicians. These, in my opinion, are defects which can be remedied, but require major changes beyond medical school.

There is a great hunger now to change medical education. In many universities, it has been changed and is still changing. Virtually all of these actual and proposed changes have been confined to the traditional four-year program. All have suggested reducing it, especially the time devoted to the preclinical sciences, and all have introduced some sort of elective system. The stimuli for these changes have been student complaints and the belief that by cutting time from the four-year curriculum we can produce graduates faster and thus remedy the physician shortage. The rationalizations are: that there is not time to teach all specialties to all medical students, hence the elective programs; that now we are over-educating our graduates especially in the preclinical subjects; and that the education we give them is often not appropriate to the specialties they choose, eg, what use is biochemistry to a neurosurgeon?

See editorial comments on page 120.

In my view, changes confined to the four medical years can, at best, produce only trivial improvement; at worst, they will result in a half-educated physician. There is too much to cram into four years. This is part of our problem. Another part of it is that our students are much too old (22 years) and too fatigued when we get them to tolerate the cram to which they are subjected. In my view the four-year medical curriculum is not too long. It is too short, but the eight-year premed plus medical curriculum is much too long.

If we wish to shorten medical education, the obvious place to take up the slack is where it is known to exist. It clearly and obviously exists in premedical college. How do those who argue that a neurosurgeon needs no biochemistry defend anthropology, physical education and history for dermatologists? Why are medical school admission committees so pleased by an "A" in calculus? The argument is that we must have well-rounded, broadly educated persons going into medical school, but we are not getting broadly educated students in medical school. We are getting freshmen who have spent three or four years in college, who, in my view, do not bring with them either in terms of culture or technical preparation anything worth the time or the money spent. They have been to the classes and obtained the grades, but is the cultural gain from the hours spent fulfilling the modern language requirement really worthwhile?

Fire for Burns

Since the slack is in the premedical college, I advocate abolishing it. This is not a wild experiment since it is the procedure all over

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Dr. Magee is chairman of the physiology-pharmacology department at Creighton University School of Medicine in Omaha, Nebraska.

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Western Europe. We can compare the British medical graduate with ours. He is in no way inferior professionally, but he is younger. It would not surprise me at all to find that the British medical graduate without the US advantage of a broad college background has, in fact, a much better grounding in the humanities. I refuse to believe that the US high school graduate is lacking in the intellectual and emotional qualities which allow the Western European to go to medical school straight from high school. I admit that over much of this country our high schools are bad. They fail even to teach children the correct use of their own mother tongue. The four-year college which we have now does not succeed in correcting the deficiencies of our high schools. For the medical student it just adds to the length, cost, and frustration of his education.

When we get the freshman medical student, he is already worn out after four years of classroom teaching in a very competitive situation. He gets no respite. He is back in the classroom, only now it is more intense and still more competitive, and he is older. He has an exam a week, learns all the facts he can for his tests, and understands little or nothing. Is the remedy for this situation shorter and more concentrated core courses in the basic sciences? No; this is using fire to cure burns. The answer is to start teaching the preclinical sciences to 18-year-olds. Teach the material which is covered in the traditional curriculum with some exceptions which I will mention. Give the same number of lectures, but instead of compressing all of biochemistry into nine weeks, two to three lectures per day, spread it over a year with two lectures per week. Understanding is what we want, but it takes time.

Medical Tower of Babel

We who are in the premedical sciences have to answer the charge that what we teach is irrelevant to clinical needs. The preclinical sciences are the broad basic background for all medical practice. Those who would curtail or abolish them often will not admit this, but will accept inadequate premedical humanities and physical education as a necessary preliminary to medicine. In the basic medical sciences some change in emphasis would be an improvement, eg, in physiology less emphasis on the electrical properties of membranes and more on gastrointestinal physiology, reproductive physiology, and nutrition; in bacteriology less emphasis on the cultural characteristics of organisms. Pharmacology should become a paraclinical science as pathology is and be taught in the clinical years.

My medical curriculum would be five to six years long. Entering students would pass an entrance exam. They would have to pass in English composition for admission. If they passed premed biology, physics, and chemistry, they would start immediately with medical physiology, anatomy, and biochemistry simultaneously. If they failed, they would spend two semesters on the premed courses. The basic sciences should take two years and the clinical sciences three. A five-year student would graduate at the age of 23 which is about the age at which his British counterpart graduates at present.

As I get older in health sciences education, the conviction grows on me that we do not know what we are trying to do. We are progressively reducing the professional education of the man who is the central figure in the whole business, ie, the physician. He has the responsibility. All the branches of the profession depend on him. But mark you, we wish to reduce most that part of his education which is directly related to the future practice of his profession. We do this in part, we say without much logic, because there is such an awful lot to know about medicine today that we should not attempt to teach it all to our students. Perhaps I am naive in feeling that in the interests of the physician and especially of his potential patients, we should react to the mass of professional knowledge by taking the time to teach it from that part of the course which is presently occupied by professionally irrelevant studies. On the other hand, we are increasing the educational requirements of the ancillary people. Much of this extra education is to give them unneeded skills which their teachers often are not competent to provide, eg, pharmacists are being trained as therapeutic consultants and nurses as administrators when what we really need are M.D.'s with enough knowledge of therapeutics to prescribe intelligently and nurses who will nurse.

Then we have invented new ancillary medical personnel (eg, the Medex program) to do jobs out of which we have educated our nurses. In many parts of the world nurses, for example, deliver most of the babies and act as health visitors taking house calls and follow-up visits for medical practitioners. Why not here?

What *are* we trying to do? Produce middle-aged physicians who do not know enough biochemistry to treat diabetes properly, pharmacists who know how to treat disease but are not allowed to do so, and nurses who can do almost anything but nurse? Perhaps not but it is what our reformed health education is already producing.

I believe we are about half way up a medical tower of Babel. Let us get off and demolish it before it falls on us.

* * *

PRACTICE MANAGEMENT

Forming A Group Practice

By Leif C. Beck, L.L.B.

Last month I described some of the primary considerations doctors should discuss and agree upon in forming an effective group practice together. Those mentioned were: (1) philosophy towards practicing medicine; (2) method of dividing the income (which will be the subject of a succeeding article); (3) deciding whether to form a partnership or a corporation; (4) defining what is group income; and (5) determining what expenses shall be borne by the group.

There are other equally important matters which the doctors planning to practice together should be sure to agree upon in advance. They are described below, and after all these various details are acceptable to the parties involved, they should be reduced to a formal written agreement. That agreement should be drafted by an attorney chosen by the doctors involved.

Some attorneys will be very helpful in guiding the doctors through the various questions my articles have raised. I stress, however, that only the doctors themselves can really decide on these matters, for only they understand their own purposes, philosophies, practices, and personalities.

Initial Capital Contributions

Where several doctors join their existing practices into a new group practice, each will have certain equipment, furniture, and the like which he can contribute to the new venture. The total values each doctor contributes will undoubtedly be unequal, presenting a problem of fairness. In addition, the new venture will generally require an infusion of cash, both to purchase newly required assets and to meet the first few months' expenses.

As to the contributions of furniture, equipment, etc., the generally desirable method is simply to credit each partner's "capital account" with the value of the assets he is contributing. Unless the assets have unique values, it is usually sufficient to value them at their "book values"—their original cost minus the depreciation which has been claimed on earlier tax returns. Occasionally, if one doctor has "accelerated" his depreciation for tax advantage far ahead of the other doctor or

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Mr. Beck is President of Management Consulting for Professionals, Inc. of Bala Cynwyd, Pennsylvania.

doctors, I have suggested that the capital accounts be based on what would have been the book values if each partner had previously depreciated his items on a "straight line" method.

These capital accounts will generally be treated as permanent measures of each partner's initial contribution to the venture. They are not likely to be paid over to a partner (either in cash or in return of the assets) until he leaves the venture, but at that time he should certainly be entitled to a payment equal to his account balance.

Such a treatment of partners' initial and permanent contributions is generally fair so long as each partner has contributed properly. Where, however, one doctor will contribute much more than his partner, it is hardly fair that he not be reimbursed for his contribution. His reimbursement can be accomplished in a variety of ways. His share of income might be increased to recognize that some income comes from the use of his assets (or in the alternative form, the freedom from paying rent for those assets). In the alternative, the doctor might instead *rent* those assets to the venture, in which case they are not contributions at all, and the venture pays him a fair return for their use.

As to the cash required to meet the first few months' expenses, it would best be contributed in the same ratio as the doctors plan to divide their income. I feel strongly, however, that the doctors should seek to keep the cash contributions to a minimum and should even seek to repay such amounts as soon as the venture is producing cash. This permits the doctors to practice medicine on minimum out-of-pocket investments, recognizing that their incomes should be due to their services and not to their capital investments.

Accounts Receivable

Except for division of income, the handling of patient accounts receivable probably causes more difficulty than any other detail. It arises in the two contexts: first, how should the receivables generated by a doctor's work *before* he joined the group be handled; and second, how should he share in the group's receivables if he *leaves* the venture?

If the new partners are merging their several existing practices, I encourage them to hold back their receivables and collect them *independently* of the new venture. These items represent potential payments for services previously provided, and since the services did not flow from the joint venture, then neither should the income inure to it. The new venture might, however, continue to bill the old patients as a convenience to each doctor, separately crediting the receipts to the doctors' personal accounts. In cases where the amounts involved vary substantially among the partners, the new venture might charge a 10% "collection" fee" to each doctor.

If one or more doctors are joining into a single, continuing practice, it is more common for the practice to continue receiving payments as if there were no interruption. That income in turn serves to meet the initial cash requirements of the new venture. In such a case, the partner(s) who performed the work deserve an income advantage in some way. Traditionally the new partners will "buy into" the venture by accepting a lower share of income for the first year or several years, the reduction being tied to the amount of initial receivables which benefit him. For instance, if a new man is to be a 40% partner in a practice beginning with $25,000 of receivables, his first year share of income might be reduced by $10,000. This reduction might instead be $5,000 in each of his first two years, to accommodate his financial needs, or it might be expressed as a further reduction in his percentage share of income rather than in dollars.

The other concern over receivables arises when a partner leaves the joint venture, whether by death, retirement or withdrawal. I believe simply that a partner should be entitled to his percentage share of the group's receivables when he leaves the group for any reason. His share should, of course, be reduced for the uncertainties of collecting their patient billings and also for the costs of collection. This often results in an arrangement whereby a departing partner's share is reduced by either 10% or 15% for these factors.

Care should also be exercised in assuring that the departing partner not be paid out for receivables long before the continuing partners have actually collected the income. This requires analysis of the practice's collection experience. If, for instance, much of the potential income is in litigation (as may be the case for orthopaedic surgeons), then the period for paying a departing partner should probably be somewhat longer than usual.

It should also be noted that these normal arrangements for a partnership require a considerable degree of accurate record-keeping. I am constantly amazed, however, at the number of group practices having no idea of their collection ratios, their accounts receivable outstanding, and other basic management information. Common sense seems to require regular bookkeeping and reporting so that such items remain within the partners' knowledge.

Vacations and Illnesses

The agreement between doctors should state how much vacation absence each of them is entitled to each year. I am a strong advocate for very substantial vacations for physicians, for they work hard enough to deserve time off. Such absences generally enable doctors to practice medicine even more effectively and efficiently when they return, and hence the time away should be to the advantage of patients and the group practice, as well as the physician and his family.

The amount of vacation time allowable obviously depends on how well the remaining doctors can handle the burden. A compelling reason for joint practice should, however, be the opportunity to stagger working schedules and allow absences. A few group practices have carried this so far as to permit "sabbatical leaves" of as much as a year. At any rate, I believe most group practices can easily accommodate as little as four and as much as eight weeks of vacation for each member.

As to absence for illness or disability, I encourage groups to provide as much absence as possible without disrupting the remaining partners' ability to handle the practice. If, for example, the other doctors can be expected to continue the burden for three months before seeking additional help, then that should be the allowable period. To cut the disabled partner off from his income share sooner would deprive him of a strong advantage of group practice, the ability of doctors to spell each other when necessary. On the other hand, to continue his income share more than three months would in this example penalize the remaining partners. They would have to hire and pay another doctor while still carrying the disabled partner, or else be overburdened longer than they can withstand the additional patient volume.

Another popular sickness arrangement is to "step-down" a partner's share of income as his absence continues. It may, for instance, provide for two months of full income share and then two more months of a half share of income if illness continues. This alternative recognizes that the effect on the remaining partners is gradual, and even the cost of hiring a replacement doctor (if that is at all possible) would be less than the sick man's full income share.

If a partner's absence continues beyond the allowable period, his sharing of income should cease, and he should become an inactive partner. He should, however, continue to be welcome to return to his original partnership status if he recovers during an extended period — perhaps one year, or even two years. If the doctor cannot return to active practice during this period, then his relationship should be terminated. A place in the group simply cannot be kept open for him indefinitely, and the group must recognize the uncertainty of his being a productive member if and when he returns thereafter.

To avoid providing in advance for this contingency can result in hard feelings and severe embarrassment if the situation actually arises, the continuing partners not being sure when the disabled man should be terminated and thus too often not wishing to face the question at all.

Retirement, Death and Withdrawal

The group's formal agreement should specifically spell out what a person is entitled to if he leaves the joint venture for any reason.

In my view, this entitlement should usually be fairly simple: (1) a return of his capital account; (2) his share of income until the date of his termination; and (3) his share of the accounts receivable, as already discussed.

Very few medical practices have any greater value than these items, for the continued scarcity of doctors belies any "goodwill" value. Proof of this proposition appears in a variety of legal and tax decisions and also in the practical inability to sell medical practices in these times. In effect, most medical practices have value only to the extent the physician actually and personally provides services; there is little or no income continuation value in the patient charts, the medical practice's name, etc.

Since a medical practice ordinarily has no real ongoing value without the doctor's continued services, I strongly resist insurance salesmen's efforts to suggest building up the recited value in order to provide a larger payout in case of death. The additional value, funded by life insurance, of course, has no relation to reality, and thus each partner is better advised to buy whatever life insurance he needs or wants without tying it to the partnership or to his partners.

Conclusion

While expressing a number of opinions based on experience with medical practices, I am also aware of valid exceptions in almost each category. These exceptions merely emphasize the cardinal rule: doctors entering into a joint practice simply must take the time to explore and agree upon the details that will govern their relationship. I hope the items I have raised in these two articles will provide an agenda of things they should consider and apply to their own circumstances.

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DISPENSING REGULATIONS

Martin Golden

The Delaware State Board of Pharmacy expects pharmacists to adhere to Federal and State Regulations governing the dispensing of prescriptions. Prescription, to be valid, must be properly written. When any portion is omitted, the physician is inconvenienced because the pharmacist must call him to obtain the needed information. More importantly, the patient does not receive needed medication until the prescription is valid. To cover the requirements of the many regulations, each prescription should contain the following:

1) Physician's name, address, and BNDD (Bureau of Narcotics and Dangerous Drugs) number.
2) Patient's name and address.
3) Name, strength, and quantity of medication.
4) Specific directions (2563 Labeling Prescriptions states that the notation "as described" is prohibited).
5) Specific refill instructions.
6) If the physician does not wish the name of the medication to appear on the label of the prescription, he must state that in writing (This is also outlined in 2563). The same rule applies to the use of child-resistant containers.

Refill Authorization

Refill authorizations are governed by the following:

Mr. Golden is the Secretary of the Delaware State Board of Pharmacy.

1) If a physician does not indicate any refills on a prescription, under the provisions of the Durham-Humphrey Act, it automatically can't be refilled without first obtaining permission.
2) Many physicians authorize refills by writing "prn" on their prescriptions. A recent FDA (Food and Drug Administration) booklet states, "FDA does not regard any such designation that puts no limit on the frequency of refilling, or the length of time that a prescription may be refilled, as valid authorization for refilling the prescription. The law gives only a duly licensed physician the authority to determine how much of a prescription-restricted drug a patient should get. A physician cannot delegate to someone else authority that he has by virtue of his license." I think that the last sentence in this quotation is the most important. Does the physician want the pharmacist to decide how often his prescriptions will be dispensed and for how long?
3) The Controlled Substance Act is very specific about the manner in which refills are authorized. Prescriptions for Schedule II medications cannot be rewritten. Authorization to refill prescriptions for controlled substances in Schedules III, IV, and V can be noted on the prescription for up to five refills. Physicians should realize that these prescriptions cannot be refilled six months after the date written even if refills remain. Telephone authorization for refills in these Schedules is permissible.

Schedule II Prescription

An area of great confusion is the prescribing of Schedule II medications. As I pointed out previously, new prescriptions must be written each time a physician wants the patient to have these medications. The law specifies that all prescriptions for controlled substances must be written with ink, or indelible pencil, or on a typewriter, and shall be manually signed by the physician. A secretary or nurse, therefore, can prepare the entire prescription with the exception of the signature. Many physicians insist that pharmacists accept refills and new Schedule II prescriptions on the telephone and, unfortunately, at times, indicate economic action if the pharmacist does not comply with the request. They promise the pharmacist that they will supply him with signed prescriptions immediately, and then at times, months go by before the necessary document is received. The Controlled Substance Act does clearly outline a mechanism for emergency Schedule II prescriptions. The procedure is covered in section 306.11 of the Act. Physicians may be surprised to learn that the liability for not supplying the proper prescriptions is theirs and not the pharmacists. A booklet issued by BNDD for practitioners gives this definition: "Emergency" means that the immediate administration of the drugs is necessary for proper treatment, that no alternative treatment is available, and that it is not possible for the physician to provide needed prescriptions for the drug at that time. Prescriptions for diet pills certainly cannot be classified as true emergencies. Basically, the section I refer to states as follows:

1) In the case of an emergency, the physician may ask the pharmacist to dispense a quantity of medication adequate to treat the patient during the emergency period.
2) The prescription shall be immediately reduced to writing by the pharmacist.
3) Within 72 hours after authorizing an emergency oral prescription, THE PHYSIIAN shall cause a written prescription for the emergency quantity prescribed to be delivered to the dispensing pharmacist.
4) The prescription shall have written on its face authorization for emergency dispensing and the date of the oral order.
5) The written prescription may be delivered to the pharmacist in person or be mailed, but if delivered by mail, it must be postmarked within the 72-hour period.
6) The pharmacist shall attach this prescription to the oral emergency pre-

scription which he earlier had reduced to writing.

7) A most important point for physicians to remember is that if the pharmacist does not receive the written prescription within 72 hours, he must notify the nearest office of BNDD or assume the penalties himself.

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Book Reviews

DISEASE AND HISTORY by **Frederick F. Cartwright,** Thomas T. Crowell Co., N.Y., 1972, 238 pp. Price $7.95.

This book is a delightful and entertaining, largely anecdotal discussion of the influence of disease in shaping the great events of history. It is apparent that it is written mainly for lay reading, but much can be learned by the medical profession, especially in the documentation of many events not generally known. It might have been of even more interest to some readers if more attention had also been given to the possible effect of climatic change upon both disease and historical events. On page 36 it is noted that in 1348 A.D. the weather was wet and that illness, including the Black Death, broke out with its subsequent paralytic effect on all Europe. It is not mentioned, however, that the previous 200 years had been excessively hot and dry. It is also mentioned that malaria and other pestilence were probably an important cause of the fall of Rome. It might also have been mentioned that at that time the climate was very warm and dry, increasing stagnant pools, promoting malarial mosquitoes, and polluting the many Roman aqueducts from insufficent water supply. The detailed account indicating that typhus fever, not the Russian Army, was the main cause of Napoleon's defeat is fascinating reading.

Dr. Cartwright also cites that William the Conqueror, King John, Edward I, Henry V, and the Black Prince as well as Albert, Prince Consort and husband of Queen Victoria, all died of either dysentery or typhoid fever. Queen Victoria through transmission of hemophilia affected history in the royal houses of several countries in Europe, not the least important of whom was Alexis, the son of Alexandra and Tsar Nicholas II.

The description of the spread of syphilis in Europe in the 15th Century and the epidemics of cholera and yellow fever in the 19th Century are exceedingly interesting.

It is a delightful book and easy to read.

Lewis B. Flinn, M.D.

* * *

MEDICAL MEN AND THEIR WORK, A SOCIOLOGICAL READER, edited by **Eliot Freidson, Ph.D.,** and **Judith Larber, Ph.D.;** Aldine Atherton Inc., New York, 482 pp. Price $15.00.

The book consists of a collection of papers and articles from current journals and references covering the sociological phases of medical education and practice.

The material is presented in two sections, each with a short introductory essay by the editor. From a medical-historical point of view, there are a number of essays that deal especially with the study and understanding of health care personnel and also a group of articles dealing with the organization of medical care in the handling of the sick patient in and out of a medical setting.

Many of the papers are stimulating and enlightening; however, many of the conclusions stated in these articles are highly debatable. This book should be helpful for community health planners, hospital administrative staffs, medical social workers, and medical historians.

Allen C. Wooden, M.D.

RUNNING SCARRED by Tex Mall, Saturday Review Press, 230 Park Ave., N.Y., 1972. Price $6.95.

This book will be appreciated best by joggers. The author, a respected sportswriter, sustained a massive myocardial infarction in 1966. After recovery from this, he started on a self-imposed schedule of exercise and diet restriction, and gradually over a two year period made himself into a veritable racehorse.

With a fortunate combination of good luck and instinct he managed to find and stay on what must be a perilously narrow pathway between rehabilitation and disaster. With some justification he takes a backward questioning look at the advice he got from various doctors not to take up running, justifiable both because he was successful, and because the idea of exercise post-myocardial infarction now seems to be gaining wide acceptance, although, of course, under careful supervision, which he did not have.

Although he has good credentials as a sportswriter, readers may be scornful of the writer's qualifications as a medical reporter, especially when they learn of his susceptibility to certain nostrums and regimens which he describes and which are of extremely dubious merit. If they themselves run, they will empathize with him as he tells us about the leg pains and searing breathlessness he experienced initially in his slow and painful conditioning process, while smokers will probably get some reinforcement for their rationalizations on discovering a man who runs five miles in 45 minutes yet is a smoker.

At the time of writing, one of his chief desires was to run in and to complete the Boston Marathon, and indeed he did run unofficially in the Marathon in 1971. We are relieved to learn that he had the good sense not to try for the whole thing, and to quit after five miles. One wishes him success and hopes to read someday how he finishes the famous contest, fighting his way across the finish line (alongside, perhaps, Eric Segal?).

Dene T. Walters, M.D.

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FUNCTIONAL HUMAN ANATOMY by James E. Crouch, Ph.D., 2nd edition, Lea & Febiger, Philadelphia, Pa., 1972, 649 pp. Price $12.50.

This is not the book you may have read about in your newspaper, the one that a woman physician took to task for using *Playboy*-type nude women as illustrations of anatomy in action. Crouch's book is intended for nurses, PT and OT students, etc., but would also serve nicely for the doctor who suddenly needs to review the locus and names of the salivary glands and their ducts, or becomes suddenly amnesic for the number of cervical vertebrae (some things you can't even ask your best friends). The one-page epilogue is a quasi-philosophic discussion of war and peace with which I largely agree but cannot quite see why it was appropriate to include it: " . . . suspicion, fear, self-interest, and materialism cannot be allowed to determine man's direction and his goals." Crouch thinks a good knowledge of anatomy will help.

Bernadine Z. Paulshock, M.D.

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WILLIAM CARLOS WILLIAMS: THE AMERICAN BACKGROUND, by Mike Weaver, Cambridge University Press, New York, 1971, 228 pp. Price $9.50

William Carlos Williams has achieved the closest to immortality that can accrue to modern man: he is listed in the Encyclopedia Britannica. That an eminent poet, acknowledged as such by his poet peers, if not terribly well known to the public during his time, spent all of his working life as a generalist-pediatrician in a small town is to me incredible. However, this book deals almost entirely with his poetic thought, the friends and fellow poets who influenced him; the medical aspects of his life are mentioned hardly at all. In the last chapter, as a part of a chronicle of Williams' own physical and mental decline, Weaver writes, "The petty torment of his daily medical practice had brought with it the mobility which fired his mind and left it spent . . . Shuttling backwards and forwards between the worlds of medicine and writing had made him complete."

Recommended only to those interested in the details of the wellsprings of Williams' poetry.

Bernadine Z. Paulshock, M.D.

President's Page

LOOKING TO THE FUTURE

I believe that all physicians will agree that the development, over the past two years on federal, state and local levels have had a tremendous impact on the private practice of medicine. Expansion and revision of the Medicare and Medicaid programs, implementation and administration of Phase I, II, and III of the Economic Stabilization Program, and consideration of a National Health Insurance Program are a few examples of federal activities which have had an impact on the physicians. On the state and local level, the rapid escalation of malpractice insurance premiums, expansion of third party payors into the prevailing fee type programs, and legislation regarding chiropractic and rate regulations have been of concern to us.

Throughout all of this, the Medical Society of Delaware, in addition to maintaining daily activities, has devoted a tremendous amount of time and energy in representing the physician's interest. Publication of the Society's official magazine, the *Delaware Medical Journal*, and preparation for the Society's annual meeting are on-going and time-consuming. However, the challenge is ever increasing. There will in all likelihood be more federal and other third party involvement in the health field and more legislation which we should try to influence. Recognizing these facts, the Medical Society is developing a planning program: we are looking to effectively utilize the Medical Society in those areas which affect us the most. The development of this program will involve establishing long- and short-range goals, re-evaluating the organization structure, personnel policies, and job descriptions, and finally developing an operating budget to reflect the resource requirements for the accomplishment of these goals.

Throughout the upcoming months I would like to encourage you to communicate to me any concerns you have regarding the future and any suggestions you may have on how we can be more effective. We need as much input and support as you can give.

Joseph A. Elliott

Editorials

COMMENTS ON "WHAT'S WRONG WITH MEDICAL EDUCATION?"

After reading Dr. Magee's article through several times, I confess to some confusion as to exactly where he stands on the issues involved. Certainly I can't fault his position that nurses should do nursing, but I am really uncertain whether he wants physicians and "neurosurgeons" to learn less or more biochemistry. As for his statement that students (at Creighton?) "understand little or nothing," if it is true, I am not certain I would advertise it like this.

Dr. Magee's article appears on page 110.

Essentially the author sallies at two broad basic subjects: the duration of a medical education and its content. As with so many who discuss the time requirement for a medical education, there seems to be an asssumption that, if we shorten the duration, we increase the output. This, of course, is not true, except for the one year in which two classes graduate. For all other years there is one class entering and one class graduating, the same situation which exists now. As for the assumption that study wears out students and makes them somehow unfit for further study, I find this a quaint concept indeed, especially since we are urging lifetime learning for all physicians. I wonder if the same study-fatigue sets in for faculty, too.

Where is the push coming from to shorten the medical school curriculum? Certainly not from the students. Most of them are overawed by the amount of material they feel they should learn and want to take all the time they can afford to learn it. Additionally, I really do not believe that most men and women are mature enough to assume the full responsibilities of a physician before they are 25 or 26 years old. So what is the hurry?

Dr. Magee asks (rhetorically) if the cultural gain of college is worthwhile. For most patients their physician is the most learned person they ever have an opportunity to talk with. They ask him all kinds of questions and expect answers. Moreover, since most physicians are in the position of irrefutable authority most of the time, they are tempted to take stands and make pronouncements in fields where they may have more opinions than knowledge. The doctor can never have too much general knowledge.

In regard to the curriculum or content that Dr. Magee proposes, his real plea is for basic sciences that are clinically relevant. I agree wholeheartedly! Some medical schools are experimenting with a policy of having clinicians — practicing physicians if you will — teach basic sciences. Thus, G.I. physiology is taught by a gastroenterologist, the pharmacology of cardiac drugs by a cardiologist, anatomy by a surgeon, etc. Initial reports are favorable, and to me this is a breath of fresh air.

The most important advantage of a curriculum that is shorter and cuts out irrelevant material is that it saves money. In these times when it costs medical schools well over $10,000 per year per student to stay in operation, this is important. However, I would suggest economies that can be realized by limiting research programs to those who really have a talent for them (thus requiring some other basis on which to make faculty promotions), and by giving practicing physicians a more active role in teaching. Most of these doctors are too busy to be anything but relevant. That's what we are trying to do here in Delaware.

E. Wayne Martz, M.D.
Director of Medical Education
Wilmington Medical Center

* * *

DELAWARE DOCTOR DATA

Henry Mason of the AMA Department of Undergraduate Education has recently published a study of manpower needs by specialty.[1] Delaware's place in the numerous tables which appear in the study review are summarized below (1971 data).

Mr. Mason agrees with those who claim that the shortage of physicians in many areas of the U.S. would not be helped by an additional 50,000 new doctors; the same places and specialties would still be in short supply.

Active Nonfederal Physicians, Intrenists, and Population Density per Internist

	Total Active Physicians	Internists	Interns & Residents	Population in State	Population per Internist
Delaware	712	126	20	548,104	4,350
Total USA	289,735	45,699	9,455	206,092,026	4,474

Active Nonfederal Physicians, General Practitioners and Population Density per General Practitioner Distributed by State

	Total Active Physicians	General Practitioners	Interns & Residents	Population in State	Population per General Practitioner
Delaware	712	158	5	548,104	3,469
Total USA	289,735	57,048	1,214	206,092,026	3,601±

Active Nonfederal Physicians, General Surgeons and Population Density per General Surgeon Practitioner

	Total Active Physicians	General Surgeons	Interns & Residents	Population in State	Population per Surgeon
Delaware	712	66	17	548,104	8,305
Total USA	289,735	27,045	6,785	206,092,026	7,554

Active Nonfederal Physicians, Pediatricians, and Population Density per Pediatrician

	Total Active Physicians	Pediatricians	Interns & Residents	Population in State	Population per Pediatrician
Delaware	712	47	12	548,104	11,662
Total USA	289,735	16,078	3,413	206,092,026	12,795

Active Nonfederal Physicians, Obstetricians and Gynecologists, and Population Density per Obstetrician and Gynecologist

	Total Active Physicians	Obstetricians-Gynecologists	Interns & Residents	Population in State	Population per Obstetrician-Gynecologist
Delaware	712	50	6	548,104	10,981
Total USA	289,735	17,207	2,364	206,092,026	11,915

Dr. Robert Ebert, Dean of the Harvard School of Medicine, has recently suggested that the federal goverment pay all house officers' salaries and also limit the positions in training in each specialty field to the number deemed necessary in each specialty. Dr. Jack Hickman, Associate Dean and Associate Professor at the University of Indiana, says that the AMA Council on Education should set quotas on the number of approved residencies in order to accomplish the same thing. Dr. Glen Garrison, Professor and Chairman of Community Medicine at the Medical College of Georgia, might be expected to agree with one or the other of these suggestions since it would be certain that in residencies in community medicine, as family medicine is now sometimes called, would not be apt to be restricted. However, Dr. Garrison considers these methods "an attempt to produce a constructive change merely by using a denial of other opportunities." Such means are not apt to produce the desired ends.

Will the government eventually decide? "Uncle Sam needs you (to practice X specialty in Y town)." It's a bleak possibility.

B.Z.P.

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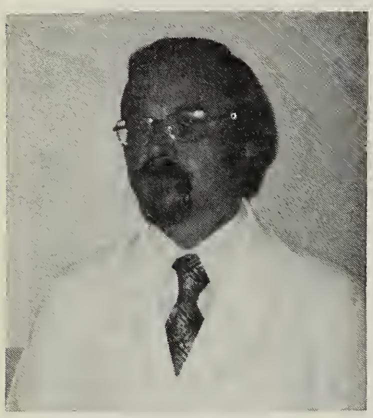
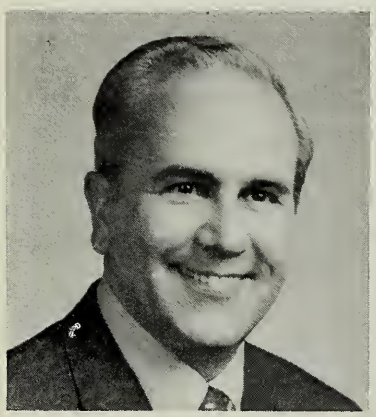
1. Mason HR: Manpower Needs by Specialty. JAMA, 219:12, March 1972.
2. Garrison GE: How to Get Doctors to Go Where They're Needed, Medical Times, 100:4:21, April 1972.

New Members



Richard P. Kennedy, M.D., a graduate of the College of Medicine, University of Miami, '65, served his internship at Wright-Patterson A.F.B. Hospital, Dayton, Ohio, and his residency at Philadelphia General Hospital. A Radiologist, he previously practiced medicine in Cherry Hill, New Jersey. His office is in the Professional Building, Wilmington. Dr. Kennedy, his wife, and their son and daughter live in Northminster, Wilmington. His interests include singing, golf, and tennis.

Carlos Pena, M.D., a graduate of the University of Madrid, Spain, '55, served his internship at Sydenham Hospital, New York, and his residency at Hurley Hospital, Flint, Michigan. A Board-Certified Radiologist, Dr. Pena previously practiced medicine in Syracuse, New York. He is currently affiliated with St. Francis Hospital. Dr. Pena, his wife Ruby, and son Miguel live in Valley Run, Wilmington. His hobbies include photography, music, and modern Spanish history.



Donald Sass, M.D., a graduate of Jefferson Medical College, served his internship at Philadelphia General Hospital and his residencies (Obstetrics-Gynecology and Radiology) at Wilmington Medical Center. He is a Board-Certified Obstetrician-Gynecologist and also a Board-Eligible Radiologist (Radiation Therapy). Dr. Sass practiced medicine in New Jersey before coming to Wilmington. Currently, he is based at Wilmington General Hospital with an office at 201 South Broom Street, Wilmington. He, his wife, and their three daughters live in Woodstown, New Jersey. Dr. Sass enjoys woodworking as a hobby.

William E. Miller, M.D., a Board-Certified Internist with a sub-specialty of Nephrology-Hypertension, is a graduate of Jefferson Medical College, '63. He served his internship at Lankenau Hospital, Philadelphia and his residency at the Cleveland Clinic. He previously practiced medicine in Honolulu, Hawaii. Dr. Miller is a member of various professional societies including the American Society of Nephrology, and he participates in several charities in Delaware. He, his wife, and their two children live in Wilmington. His office is in Lombardy Medical Center, Wilmington. Sailing, fishing, spectator sports, and listening to music are his major outside interests.

In Brief

Speakers on "Ask the Doctor"

Speakers for May on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: May 1, Charles L. Reese, III, M.D., *Epilepsy;* May 8, James F. Reamer, M.D., *What Is a Pathologist?;* May 15, Jordan Storlazzi, M.D., *Hyperactive Children;* May 22, I. Favel Chavin, M.D., *Total Joint Replacement Due to Arthritis;* May 29, Jerome Kay, M.D., *Depression.*

Medico-Legal Symposium

The 8th Annual Medico-Legal Symposium, co-sponsored by the Medical Society of Delaware and the Delaware Bar Association, will be held at the University and Whist Club, Wilmington, Delaware, May 17, 1973. Part of the program will cover the physician's day-to-day working relations with lawyers. Call the Medical Society of Delaware office for reservations (658-7596).

Diabetes Symposium

An all-day Diabetes Symposium, entitled "What's New in Diabetes?", presented by Geigy Pharmaceuticals and sponsored by the Medical Society of Delaware and the Delaware Diabetes Association, will be held at the Hotel DuPont, Wilmington, Delaware, May 23, 1973. A printed program will be mailed shortly.

Registration of X-Ray Machines

The Office of Radiation Safety of the Division of Public Health, State of Delaware, has issued a statement reminding owners of X-Ray machines that they must be registered.

Records in the Office of Radiation Safety indicate that many users have not registered ionizing radiation machines (X-ray machines). Many owners also have neglected to submit registration forms when new machines are purchased, or have failed to report changes of office location. A spokesman said the Office of Radiation Safety should also be notified when use of machines is discontinued because of obsolescence, disposal by trade-in, or cessation of practice.

Delaware Radiation Control Regulations, effective since January of 1970, say: "The owner or person having possession of any radiation machine . . . shall register such machines with this agency within 30 days following the effective date of these regulations or within 14 days after acquisition of such machines. Registration shall be on forms available from this agency."

Additional information or registration forms are available from the Office of Radiation Safety, Division of Public Health, Cooper Memorial Building, Dover, 19901. Telephone: 678-4734.

Alcoholics Anonymous

Alcoholics Anonymous has available many pamphlets to help the professional person learn to understand and aid the alcoholic. Information about these publications may be obtained by writing to A.A. World Services, Inc., P.O. Box 459, Grand Central Station, New York, New York, 10017.

CLINICAL NOTICES AND MEETINGS

Computer Medicine

A three-day course emphasizing how a physician can use computers in the practice of medicine from his office will be offered at the College of Physicians of Philadelphia May 24-26. The course, sponsored by Temple University Health Sciences Center and The Society for Computer Medicine, will offer lectures and workshops on the computer and patient accounting, the preparation of medical reports, patient history taking, electrocardiograms, as well as general information on computer programming. For further information contact the Office for Continuing Education, Temple University Health Sciences Center, 3400 N. Broad St., Philadelphia, Pa., 19140.

Headache Meeting

The Annual Meeting of the American Association for the Study of Headache will held at the Plaza Hotel in New York City, June 23-24, 1973. The meeting will include prominent speakers in the field of Headache, a panel discussion on "Biofeedback, Meditation and Acupuncture in the Treatment of Headache", a Symposium on Migraine, and a banquet (for members only). For information write to Seymour Diamond, M.D,, President and Executive Secretary, American Association for the Study of Headache, 5252 N. Western Avenue, Chicago, Illinois, 60625.

Alcoholism Institute

The Division of Continuing Education of the University of Delaware announces a Delaware Summer Institute on Alcoholism, to be held at John M. Clayton Hall, Newark, Delaware, June 10-14, 1973. The purpose of the institute is to provide basic information for people whose work brings them in contact with problems of alcohol. Special areas of concern include: individual counseling techniques, organization techniques, and behavior modification techniques. Registration information can be obtained from Mr. Frederick D. Brown, Division of Continuing Education, University of Delaware, Newark, Delaware, 19711.

Legal Institutes

In cooperation with the Health Law Center of Aspen Systems, Inc., of Pittsburgh, the American College of Emergency Physicians (ACEP) will sponsor three Emergency Department Legal Institutes during the rest of this year. The Institutes will feature law as it relates to the emergency physician. Institutes will be held June 22-23, at the Plaza Hotel, New York City; September 20-21, at the Regency Hyatt House, Chicago; and December 6-7, at the Fairmont Roosevelt Hotel, New Orleans. For additional information, contact the American College of Emergency Physicians, 241 East Saginaw, East Lansing, Michigan, 48823.

Annual Meeting

The American College of Obstetricians and Gynecologists will hold their Annual Clinical Meeting May 21-24, at the American Hotel, Bal Harbour, Fla. This 21st clinical meeting will feature formal papers, reports on current investigations, and specialty meetings on Community Health, Maternal and Perinatal Medicine, Oncology, Pediatric and Adolescent Gynecology, and Psychosomatic Obstetrics and Gynecology. For further information contact: Donald F. Richardson, Associate Director, American College of Obstetricians and Gynecologists, One East Wacker Drive, Chicago, Ill., 60601.

Confluence '73
Postgraduate Courses

The American Medical Association has announced that Confluence '73, successor to AMA's popular annual convention, will be held in New York City, June 23-27. There will be eighteen postgraduate courses—eleven of them never offered before by AMA—and Joint Scientific Sessions, offering an opportunity for physicians in different specialties to meet and exchange ideas on highly topical subjects. Registration must be made before May 23, 1973. Write to: Circulation and Records Department, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610.

Heart Disease

The American College of Physicians is offering six postgraduate courses in May. Subjects range from Rheumatic Diseases to Progress in Nephrology. All offer credit hours towards the AMA "Physicians' Recognition Award." Write to: Registrar, Postgraduate Courses, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Lecture

The 15th Annual David Flett duPont Memorial Lecture will be held in conjunction with the New Castle County Medical Society Meeting on May 15, 1973, at 8:00 p.m., 1925 Lovering Ave., Wilmington, Delaware. Guest lecturer will be J. O'Neal Humphries, M.D., Associate Professor of Medicine, Johns Hopkins University. He will speak on the topic, "Natural History and Medical Management of Ischemic Heart Disease Syndromes."

Seminar on Death

The third President's Seminar on Issues of Ethics in Biomedical Sciences will be held May 9th, at 7:00 p.m., Main Auditorium, College of Medicine and Dentistry of New Jersey, Rutgers Medical School, University Heights Campus, Piscataway, New Jersey. Speaking on "Definition of Death" will be Robert M. Veatch, Ph.D., from the Institute of Society, Ethics and the Life Sciences.

CLASSIFIED AD SECTION

Advertisements under the Classified Ad Section are charged at the rate of 30 words or less, set solid. One insertion $4.00. Call the Journal office, 658-7596 for further information or placement. All advertisements are payable in advance. The Editorial Board reserves the right to edit copy. Closing date for new copy is the first of the month for inclusion in the current issue.

Classified advertisements of a professional nature are free to members.

EMERGENCY ROOM PHYSICIAN: (GENERAL SURGEON) Graduate of Vanderbilt Medical School ('68). Completed 1 year of General Surgical training at University of Virginia in Charlottesville. Completed military obligation as flight surgeon. Available immediately.

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PEDIATRICIAN: Graduate of Tehran University, School of Medicine, Tehran, Iran. Passed ECFMG and Delaware State Board (Jan., 1973). Currently completing 3rd year of Pediatric Residency at The Methodist Hospital, Brooklyn, New York. Interested in full-time hospital position or group practice.

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Delaware
Medical Journal

MAY, 1973
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NUMBER 5

HYPOCALCEMIA FOLLOWING THYROIDECTOMY

Tetany is not uncommon following thyroidectomy. Preoperative elevation of alkaline phosphatase has been found a marker for predicting which patients are most likely to suffer postoperative complications of tetany.

Harold B. Bob, M.D.

Introduction

In 1883 Kocher presented a case of a patient dying of tetany following total thyroidectomy for goiter.[1] The parathyroid glands and parathyroid hormone were not known at that time, but undoubtedly their inadvertent removal led to hypocalcemia, which lowered the threshold of skeletal muscle excitation and resulted in tetany. Since that time surgeons have exercised increasing care in preserving parathyroid tissue and its blood supply. Nonetheless the phenomenon of hypocalcemia following subtotal thyroidectomy still occurs, especially in the treatment of thyrotoxicosis. Its incidence has been quoted in recent studies as 11%[2] and 17.6%[3].

It is a commonly known fact that in patients with primary hyperparathyroidism, the postoperative lowering of serum calcium is much more rapid among those having osteitis fibrosa than among those having nephrocalcinosis. Oliver Cope refers to it as "bone hunger" or the "recalcification period."[4] Since osteitis fibrosa is a well-documented, albeit less commonly discussed, sequela of thyrotoxicosis, we suggest that a similar mechanism of bone hunger may occur following removal of the overactive thyroid gland.

Clinical Material

We have reviewed the records of the subtotal thyroidectomies performed to relieve thyrotosicosis at the Delaware Division of the Wilmington Medical Center between January, 1970 and March, 1972. Prior to that time SMA 12 examinations were not routinely done preoperatively, and the necessary preoperative and postoperative calcium pairs were rarely available for retrospective study. We were also interested in relating the preoperative alkaline phosphatase to the lactic dehydrogenase (LDH) and serum glutamic-oxal-

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Dr. Bob is a surgical intern at the Wilmington Medical Center.

acetic transaminase (SGOT), and then relating the alkaline phosphatase to the pre- and post-operative serum calcium levels.

An elevation of the alkaline phosphatase in the face of normal SGOT and LDH would be presumptive evidence of skeletal disease, and we expected that these would be the patients to manifest lowering of serum calcium postoperatively.

There were nine patients studied. They were all female, ranging in age from 20 to 50 years. The mean age was 28 years. Data obtained are presented on Table I.

All nine patients had elevated preoperative alkaline phosphatase values. Four of the nine also had abnormalities of either the LDH or the SGOT. All of the patients had normal calcium values preoperatively, but seven of the nine patients with elevated alkaline phosphatase values preoperatively had lower than normal calcium values on the first or second postoperative day. None of the patients were symptomatic, and none were treated for their hypocalcemia.

The seven patients with lower than normal postoperative calcium values had alkaline phosphatases ranging from 135 to 198 mU/ml, with a mean of 162 mU/ml. The two patients with normal postoperative calcium levels had alkaline phosphatases of from 116 to 126 mU/ml.

Discussion

The data here, though representative of only a small study, suggest a correlation between the preoperative alkaline phosphatase and the phenomenon of lowered postoperative calcium.

When the LDH and SGOT are normal, an elevation of the alkaline phosphatase may be presumed to be the result of bone disease.

F. Von Recklinghausen in 1891 described for the first time a patient having osteomalacia associated with thyrotoxicosis.[5] Since that time osteomalacia has become a well-studied sequela of thyrotoxicosis, however, because it is subtle and less dramatic than some of the other symptoms, it is often overlooked in discussions of the natural history of the disease.

Fifteen patients with established thyrotoxicosis who were free from cardiac or renal disease were studied by Clerkin et al.[6] When calcium was infused intravenously, they were found to have an increased retention of calcium. Since the skeleton is the reservoir for 99% of the body's calcium, this abnormal retention almost certainly reflected a skeletal deficit. Six of the fifteen patients had definite corroborating evidence of skeletal radiolucency.

Another study compared the density of cortical bone in 92 thyrotoxic patients to a control group of 177 patients.[7] The authors measured the density of the middle metacarpals using standardized aluminum step wedges, and found the thyrotoxic group to have significantly less density than the control.

In 1953 a study from Johns Hopkins University reviewed twenty autopsy specimens which had carried a diagnosis of thyrotoxicosis.[8] Evidence of osteitis fibrosa (excessive bone destruction) was found in every case, while osteomalacia (defective deposition of inorganic elements) and osteoporosis (general rarefaction) were found in some members of the group. They concluded, "If, as there appears to be agreement, lime salts are lost from the organism in excess of intake, the only source can be the skeleton."

Another suggested model for post-subtotal thyroidectomy hypocalcemia is the release of thyrocalcitonin from the thyroid gland during surgery. A group at the University of Tokyo studied this possibility, measuring serum calcium levels before, during, and after thyroid surgery.[9] They found a decrease in the serum calcium corresponding to the time when the thyroid gland was being manipulated.

Their suggestion is interesting inasmuch as thyrocalcitonin is known to lower the serum calcium. Since what they are postulating is a traumatic release of thyrocalcitonin, we would expect that action to be short and nonsustained. Moreover with the thyroid removed in the surgical procedure, more thyrocalcitonin could not be produced. As expected, the lowered calcium was transient, and in each of their cases it had returned to nor-

TABLE I

COMPARISON OF PREOPERATIVE AND POSTOPERATIVE VALUES

	Preoperative Values				Postoperative Values
Patient	Alkaline phosphatase	LDH	SGOT	Calcium	Calcium
1.	162*	135	38	9.4	8.4*
2.	174*	150	34	10.3	8.4*
3.	195*	130	31	9.4	7.8*
4.	139*	134	69*	9.6	8.1*
5.	170*	325*	56	9.7	8.4*
6.	126*	140	34	8.9	8.7
7.	135*	155	65*	8.9	6.8*
8.	116*	154	92*	10.1	8.6
9.	139*	181	36	10.1	8.2*

* Abnormal value

Normal values:

Alkaline phosphatase 30-85 mU/ml, LDH 90-200 mU/ml, SGOT 10-50 mU/ml, Calcium 8.5-10.5 mg/100ml.

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mal within three hours. The patients mentioned in this study were all euthyroid, and all had normal calcium values a day or two after surgery.

Since the seven patients with hypocalcemia in our study remained so for a day or two postoperatively, their hypocalcemia probably cannot be explained by the mechanism of thyrocalcitonin release.

Summary

The data presented in this paper indicate that some patients undergoing subtotal thyroidectomy for thyrotoxicosis have an elevated serum alkaline phosphatase which can be correlated with a transient drop in calcium in the first two postoperative days. Radiologic, histologic, and chemical evidence from the literature has been reviewed to demonstrate the widespread incidence of skeletal disease in thyrotoxicosis. Although the exact mechanism of the effect of thyroid hormone on skeletal tissue has not been clearly demonstrated, the presence of its effect is undeniable.

In view of these facts we concur with Michie et al who wrote, "it is now considered that the term hypoparathyroidism when used for hypocalcemia developing within one or two days of thyroidectomy for thyrotoxicosis is misleading and should be discarded.[10] We suggest that this phenomenon may be a result of a "recalcification period" similar to that described for patients with associated osteitis fibrosa.

Because of this we recommend that the serum alkaline phosphatase be routinely determined prior to subtotal thyroidectomy for thyrotoxicosis, and that consideration be given to prophylactic calcium therapy for patients with elevated values.

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THE HYPOGLYCEMIAS, THEIR DIAGNOSIS AND MANAGEMENT

This article reviews the clinical symptomatology and pathophysiologic basis common to all hypoglycemic states. The currently recognized hypoglycemic entities are outlined in historical review and their diagnoses discussed. Distinction is drawn between the life-threatening fasting hypoglycemias and the less serious postprandial hypoglycemias. Appropriate therapy for both is outlined.

LEON S. SMELO, M.D., F.A.C.P.

The year 1971-1972 marks the 50th anniversary of the discovery of insulin, the master anabolic hormone of the body and its sole agent with a physiologic hypoglycemic function. We commemorate Banting and Best's achievement primarily as the great boon for the person with diabetes but a fringe benefit has been the recognition by physicians of hypoglycemia as a clinical entity. Before 1921 hypoglycemia was hardly known, although Joslin in 1921 did cite its rare occurrence in the undernutrition treatment of diabetes.

Porges in 1910 clinically noted its presence in Addison's Disease and Cushing in chromophobe adenoma. During the early years which followed the finding of insulin, hypoglycemia and hyper-insulinism were considered to be opposite facets of the same entity, an error still frequently exhibited in lay publications and discussions. Medically, it is now fully appreciated that the blood glucose level is a dynamic equilibrium between the rate of glucose production by the liver and the rate of glucose consumption by the tissues. In turn, these functions are regulated by the neuro-endocrine system. Insulin, alone among the hormones, and the parasympathetic nervous system exert a hypoglycemic effect; all the other hormones, particularly cortisone, epinephrine, glucagon, and growth hormone, and the sympathetic nervous system exert a hyperglycemic effect.

Among the organs, only the brain, central nervous system and erythrocytes have an obligatory metabolic requirement for glucose. An adequate blood glucose level is thus vital to the normal functioning of the brain and central nervous system. This affords a teleologic explanation for the fact that the neuroendocrine system is weighted to obviate or overcome hypoglycemia. Low blood sugar has as its etiology either excess insulin-parasympathetic activity or inadequate contra-insulin-sympathetic activity.

Signs and Symptoms of Hypoglycemia

Whatever the cause, hypoglycemia is clinically revealed by a characteristic and progressive series of signs and symptoms. Our knowledge of these manifestations has largely resulted from experience gained in the care of iatrogenic hypoglycemia due to excess insulin administration in the therapy of diabetes.

The earliest signs and symptoms arise from the body's counterregulatory output of epinephrine in response to hypoglycemia and consist of pallor, especially circumoral and across

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Dr. Smelo is with the Medical Diagnostic Clinic, Birmingham, Alabama; Chief, Metabolic Division, Baptist Medical Center, Montclair; and Clinical Professor of Medicine, Medical College of the University of Alabama.

This paper was originally presented at the Tuesday Morning Medical Conference, Wilmington Medical Center, at the Academy of Medicine.

the bridge of the nose; a fine tremor; anxiety; epigastric gnawing; sweating, at first predominantly of the palms and soles, and later of a magnitude grossly inappropriate for the room temperature; and a sense of marked weakness. Persistence of hypoglycemia provokes a graded impairment of cerebral and central nervous system functions extending progressively downward from the cerebral cortex to the medulla as first outlined by Himwich.[1] Failing memory, blunted thinking, poorly coordinated movements, coarse tremors, paresis, convulsive movements, urinary and fecal incontinence, and total loss of consciousness comprise a representative set of manifestations shown by a single patient.

While there is a tendency for each individual to exhibit his own symptomatic pattern with repeated episodes of hypoglycemia, such repetitiveness cannot be relied upon for diagnostic purposes. With recurrent attacks of hypoglycemia, adrenal nonresponsiveness develops, and the patient will exhibit solely the signs of central nervous dysfunction up to the stage of loss of consciousness. Allegedly, the patient has "blacked out all of a sudden without warning" or abruptly exhibited psychotic behavior. Questioning such patients after recovery frequently elicits signs and symptoms which were noted but whose significance was misevaluated or disregarded. Children tolerate hypoglycemia marked by blood glucose levels in the 30's without symptoms better than adults. Frequently, hypoglycemic adults are asymptomatic while at bedrest and rapidly develop with activity signs and symptoms recognized both by the patient and by attendants. For diabetics under therapy with insulin or oral hypoglycemic agents, a sound rule to follow is to suspect hypoglycemia in the event of behavior different from the usual or from what might reasonably be expected; search for further and unmistakable evidences of hypoglycemia or performance of a stat blood sugar will clarify the diagnosis and permit appropriate management. Use of Dextrostix (*Ames*) analyzed in a reflectance meter by properly trained nursing personnel and its reliable blood sugar readings within one minute has greatly facilitated the handling of such patients and proved most instructive to all concerned.

While experience forces medical recognition of the fact that hypoglycemia may elicit no patient-recognizable symptoms until abrupt loss of consciousness, careful serial blood sugar evaluation of these persons invariably demonstrates the presence of hypoglycemia for several hours prior to the black-out. For purposes of patient education, the concept of unrecognizable hypoglycemia should be rejected as physiologically invalid and emphasis placed upon self-training to detect subtle evidences of hypoglycemia and upon individual responsibility to so do by all recipients of the life-sustaining benefits of insulin. In my experience, this has been the only effective solution (although admittedly not 100 per cent successful) to the problem presented by the insulin-treated patient who fails to recognize and manage his hypoglycemic reactions. Tolerating a "little spillage of sugar" to avert such reactions has not eliminated the difficulty.

The lesson taught by our insulin-treated diabetic patients that frequently recurrent hypoglycemia may obliterate the typical evidences thereof, must constantly be remembered whenever "black-outs" or bizarre behavior is encountered. Blood sugar evaluation has occasionally disclosed hypoglycemia in such patients.

Historical Survey

In 1924 Seale Harris first called attention to spontaneous hypoglycemia or reactive hypoglycemia as a disease entity in an article entitled "Hyperinsulinism and Dysinsulinism."[2] Three years later Wilder et al reported the first proven case of hyperinsulinism due to an insulin-producing pancreatic tumor by demonstrating insulin in hepatic metastases.[3]

It is well established today that the entity now designated as spontaneous hypoglycemia responds well to medical therapy and is not benefitted by surgical intervention upon the pancreas while, contrariwise, islet cell insulin-secreting tumors require surgical excision for successful management. But during the years which followed the initial recognition of these entities, confusion reigned in the differential diagnosis and many patients were subjected to unnecessary surgery.

In 1935, A. O. Whipple clarified the confusion with his formulation of three criteria to permit diagnosis of an islet cell tumor and to warrant surgery.[4] Whipple's triad consists of: (1) A pattern of symptomatic attacks related to fasting. (2) Fasting blood sugar levels below 50 mg/100 cc during attacks. (3) Immediate recovery following glucose administration. The validity of these criteria was established by their indicating correctly the diagnosis of 27 tumors in 35 cases with suspicious symptoms.

In 1939, H. G. Himwich's classic studies on cerebral metabolism were published, demonstrating that the sensitivity to hypoglycemia and to anoxemia was inversely related to the embryological age of the brain structure.[1] Accordingly, signs and symptoms of hypoglycemia exhibit a progressive pattern, arising in sequence from five areas of the brain (cortex, subcortex, mesencephalon, premyelencephalon, and myelencephalon) based upon their progressively decreasing susceptibility to the deleterious effects of hypoglycemia.

In 1940, Conn offered the first published etiological classification of the then known causes of hypoglycemia and emphasized the value of a high-protein, low-carbohydrate diettary regimen in the functional hypoglycemias, the type of diet which continues to the present to be a mainstay of therapy.[5,6]

In 1950, Howard, Moss and Rhoads published a collective review of hyperinsulinism and 398 reported islet cell tumors to that date, of which 70 to 95 per cent were benign adenomata occurring chiefly in patients between the ages of 30 to 60 years.[7] Multiple site tumors within the pancreas were found in 2% to 4% of cases.

In 1956, Seltzer, Fajans and Conn presented the initial report of spontaneous hypoglycemia as an early manifestation of diabetes mellitus.[8] In such cases elevated blood sugars during the initial phase of a five- or six-hour glucose tolerance test establish the diagnosis of diabetes. The hypoglycemic phase is secondary to the earlier hyperglycemia; the combination in sequence represents the earliest evidence of the carbohydrate intolerance of diabetes.

To be distinguished sharply from the late hypoglycemia of early diabetes is the hypoglycemia which develops in the second to the fourth hour of a glucose tolerance curve without a preceding hyperglycemia. This variety of spontaneous hypoglycemia represents a manifestation of autonomic nervous system instability, has no implications with respect to diabetes, and is by far the type encountered most frequently in clinical practice.

In passing, a rarely met form of hypoglycemia will be cited for the sake of completeness. This is the hypoglycemia which develops in consequence of sequential carbohydrate administration at appropriately spaced intervals. Encountered with equal infrequency is the hypoglycemia of non-beta cell tumors, most often large abdominal or thoracic sarcomas.

In recent years alcoholic hypoglycemia has gained much prominence. While cited in several patients in 1940, by Dillon, Dyer, and Smelo,[9] it was more thoroughly studied in 1965 by Freinkel, et al[10] who ascribed the hypoglycemia to impaired hepatic gluconeogenesis combined with restricted food intake. Fasting favors the onset of alcoholic hypoglycemia, but it may develop despite food ingestion or occur in insulin-treated diabetes, with the alcohol presumably responsible for the hypoglycemia since no such state arose earlier on the same diet and insulin program without supplementary alcohol. Correspondingly, other drugs may intensify the blood sugar depressant actions of insulin or of the oral hypoglycemiac agents and provoke a reaction in persons not previously so affected. Particularly to be kept in mind in this regard are the antimicrobial sulfonylurea drugs employed against urinary tract infections and the beta sympathetic blockers (as Inderal-*Ayerst*) utilized in coronary heart disease and cardiac arrhythmias.

In 1959-60, the development by Berson and Yalow of the radio-immunoassay planna insulin, followed by its extension to other protein hormones and advances in assaying the steroid hormones, has collectively permitted more precise evaluation of the role of the endocrines, especially the pancreatic beta cells, in the hypoglycemic states.[11] Concurrently supplementary tests employing tolbutamide, leucine, etc. have been developed to enhance the value of the data given by the endocrine measurements. As a decade of experience has accumulated with hormonal assays in managing patients with hypoglycemia, the opinion now may be voiced that such determinations are informative and helpful, but in most cases are not essential for realizing the correct diagnosis and the appropriate management.

These goals predominantly may be attained by correlation of the values of one or more six-hour glucose tolerance tests (true glucose method) with findings secured from a complete history, thorough physical examinations, and procedures performed in a good clinical laboratory.

To recapitulate, the hypoglycemias comprise:

(1) Spontaneous (reactive) (neurogenic) hypoglycemia.
(2) Hyperinsulinism of beta cell tumors (and non-pancreatic sarcomas).
(3) The late hypoglycemia of early diabetes mellitus.
(4) The hypoglycemia of endocrine or hepatic insufficiency.
(5) Alcohol- and drug-induced hypoglycemia.

Whatever the etiology of hypoglycemia, from the standpoint of management it is best classified as either fasting or postprandial. This division separates the potentially life-threatening from the symptomatically annoying. By the very nature of the hypoglycemia, it reveals the urgent need for appropriate care in the fasting hypoglycemias which result from organic disease. Loss of life or prolonged severe impairment of well-being is not involved in the postprandial hypoglycemias, which do demand therapy, however, to restore a happy life pattern and relief from disturbing symptoms. The call is more for the art of medicine than for diagnostic acumen.

The Fasting or Organic Hypoglycemias

Compared to the postprandial hypoglycemias, the fasting hypoglycemias occur relatively infrequently and are organic in etiology. They originate in: (1) Hyperinsulinism from (a) pancreatic beta cell adenomas, (b) pancreatic beta cell malignancies, and (c) rare extra pancreatic, insulin-secreting tumors, usually of large magnitude. (2) Endocrine Deficiencies, (a) anterior pituitary hypofunction, (b) adrenal cortical hypofunction. (3) Severe hepatic insufficiency including the glycogen storage diseases with failure of gluconeogenesis or glucose output by the liver. Diagnoses (2) and (3) can readily be made or excluded by appropriate studies of factors other than the blood sugar.

Prior to the advent of practical and reliable serum assays, the diagnosis of true pancreatic hyperinsulinism was largely based upon demonstration of Whipple's triad. This triad still continues to be the key to the diagnostic suspicion and confirmation of beta cell adenomas but ancillary criteria are also available.

The following facts are cited by Conn and Pek in their treatise on Spontaneous Hypoglycemia.[12] (1) Ninety per cent of patients exhibit fasting plasma levels of immunoreactive insulin which are inappropriately high for the existing level of blood glucose. (2) Prolongation of food deprivation produces a progressively greater incidence of severe hypoglycemia. Of 74 patients with adenoma at the Mayo Clinic, one-third developed severe hypoglycemia within 12 hours; another one-third between the 13th and 24th hour; one-fourth between the 25th and 48th hour; only two patients could fast up to 72 hours. None of five patients with islet cell carcinoma were able to fast for longer than 24 hours. (3) Intravenous administration of sodium tolbutamide produced marked and extended hypoglycemia with abnormal hyper-insulinemia in 18 of 22 cases with proven islet cell tumors. Such responses are not obtained in patients with extrapancreatic tumors productive of hypoglycemia and in individuals who have ingested sulfonylureas surreptitiously. (4) Intravenous administration of leucine resulted in excessive increase in plasma insulin and decrease in blood glucose in 70 per cent of patients. (5) In 50 per cent of islet cell tumors, the insulinemic response to intravenous glucose is excessive. (6) The oral glucose tolerance gives indecisive results, occasionally even a diabetic-type curve. Appropriate utilization of this diagnostic armamentarium should be conclusive in the occasional instance that an islet cell is suspect.

In accord with the 1950 report of Howard, Moss and Rhoads,[7] Conn also states such tumors may arise at all ages, but forty to fifty per cent occur in the fifth decade of life. Only ten per cent are malignant, in which case the clinical course advances more rapidly with frequent and severe hypoglycemic reactions progressing to convulsions and coma.

In contrast, the postprandial hypoglycemias rarely if ever are marked by convulsions and loss of consciousness. In the writer's experience these do occur, but are infrequent; blood insulins have not yet been sampled at the time.

The diagnosis of hypoglycemia probably due to an insulin-producing islet cell tumor calls for a careful appraisal of the other endocrine glands. The pituitary, parathyroid, and/or adrenal cortex require particular surveillance because of the occasional association of islet cell adenomas with adenomas involving one or all of these glands in the so-called "endocrine adenomatosis."[14]

The indicated therapy for a suspected islet cell tumor is surgical removal. Fortunately such tumors are infrequent because experience has demonstrated that they may be very difficult to find and a number of case reports cite multiple laparotomies before successful excision was achieved. In the event that hepatic or distant metastases have occurred, control of the hypoglycemia has been reported with diazoxide [15] and with steptozotocin.[16]

The Postprandial Hypoglycemias

Of the postprandial hypoglycemias, only the late (four to six hour) hypoglycemia of early diabetes has definitely correlated plasma insulin values. In the six-hour glucose-insulin tolerance test, the delayed and impaired secretion of insulin by the beta cells is responsible for the early hyperglycemia, which in turn acts upon the islets to provoke the hyperinsulinemia and hypoglycemia exhibited in the second portion of the test. Further deterioration of the islet function and a more severe grade of diabetes is revealed by abnormal hyperglycemia and abnormal hypoinsulinemia throughout the tolerance curves.

No consistent blood glucose-insulin relationship has been demonstrated in the commonly encountered two to four hour hypoglycemia of adult life, the "functional hypoglycemia" of Conn. These patients who constitute the bulk of hypolycemics in ordinary practice do not exhibit excessive increases in plasma insulin in response to ingested glucose. The cause of functional hypoglycemia is unknown according to Conn and Pek.[13]

It is the writer's observation that these patients are "vagotonic."

Upper G. I. radiographs disclose hypertonicity and the colon x-ray, spasticity. Clinically, these patients exhibit hypotension, sweaty palms and soles, and bradycardia. One may speculate that the excessive parasympathetic activity retards the hepatic release of glucose in response to a rapidly falling blood sugar level, thereby permitting hypoglycemia to develop.

Whatever the mechanism, these patients respond well to a therapeutic program which is a high protein-low carbohydrate diet with small between meal feedings combined with prescription of parasympathetic blocking or sympathetic-stimulating drugs. Concurrent with utilization of these diet and drug measures, every effort should be made to impress the patient with the functional nature and relative insignificance of the symptoms. We aim to convince the patient that his symptoms originate in his own autonomic nervous system and that his vagal overactivity is a reflection of his personality rather than a manifestation of disease. We inform him that our dietary and drug prescriptions can alleviate his symptoms, but that understanding and skillful neglect on his part can cure them.

This therapeutic approach must be persisted in and reaffirmed for years, but gives a high incidence of favorable outcome. Repetition of the glucose tolerance tests and clinical evaluation thru the years discloses continuance of the functional hypoglycemia and of the vagotonia, but symptomatically the patients are relieved. They have learned to live with their personalities and require no diet restriction or medication. In my experience this method of dealing with functional hypoglycemia is far superior to that which stresses the hypoglycemia and the need for a rigid dietary program to deal with it. Many such patients now followed as long as a quarter century have not shown an enhanced rate of progression to diabetes.

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ADMITTING PATIENTS FOR TESTS MAY NOT ALWAYS BE "OVER-USE"

ELEANOR C. LAMBERTSEN, R.N., Ed.D.

I had the opportunity recently to observe the x-ray department of a leading urban medical center. The experience raised a number of questions about the deficiencies of ambulatory care for selected patient population groups.

The patients I observed were predominately elderly persons who were referred to the center for such tests as gall bladder series, gastrointestinal series, or barium enema. All of these procedures require fasting in addition to routines for extensive cleansing of the intestinal tract. For most people, these are debilitating experiences and the patients I observed clearly showed signs of physical weakness and fatigue. None of them communicated verbally with another patient; none read; they merely sat and waited to be called for their tests.

In some hospitals the waiting time is unpredictable and patients may sit for hours.

How safe is it for an elderly patient with a physical disorder and who is under the stress of a diagnostic regimen to travel long distances, often unescorted, on public transportation involving frequent transfers? Is it misuse of hospital beds if a patient with clearly evident symptoms requiring selected diagnostic procedures is admitted for the length of time needed for the service? Some hospital spokesmen have advocated a minimal care unit or a motel-type facility for this purpose. However, we are still left with the problem of unavailability of hospitalization insurance coverage for patients admitted for diagnostic evaluation rather than therapy.

Bed utilization and costs of hospital and medical services are recognized as critical social concerns. But it is equally important to recognize the shortcomings of ambulatory diagnostic services for selected patient population groups, and to solve the problem of housing these patients.

Dr. Lambertsen is Director of Health Services, Sciences and Education, Teachers College, Columbia University.

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HEADACHE MECHANISMS*

PART I

HELEN GOODELL, B.S.

EDITORIAL NOTE

Dr. Fred Plum, Anne Parrish Titzell Professor of Neurology at New York Hospital and Cornell University Medical College, and Dr. Bronson S. Ray, Professor of Neurosurgery at Cornell University Medical College, contributed the following comments:

Helen Goodell, who herself played an indispensable part in the whole exciting and creative adventure, tells here of her work on headache with the late Harold G. Wolff and his colleagues. The inspiring and always-curious Wolff was one of the great original minds that founded the discipline of clinical research in this country. In reading Miss Goodell's account, we realize how much of today's knowledge of the mechanism and treatment of headache depends on the foundations which he and his associates constructed with her help.

FRED PLUM, M.D.

This account of Harold Wolff's life work assembled by his valued associate Helen Goodell brings together in brief and accurate form the high points of the detailed study of mechanisms of headache. I valued my association with Harold Wolff in my being able to contribute a limited part of the major effort which stands as a landmark in clinical investigation and a guide to both physicians and laymen in this common ailment.

BRONSON S. RAY, M.D.

I hope you will accept me as an historian, or, perhaps better, as the raconteur, of some of the events in the unfolding of the mechanisms of headache so brilliantly achieved by Doctor Harold G. Wolff — for whom I was most fortunately the Research and Editorial Associate for 30 years. Dr. Wolff's purpose to investigate headache was shaped and his forces already clearly focused when I came to work with him in 1932. The directions of his attack were many and the means of pursuit ingenious to say the least, comprising as they did, procedures and techniques from nearly every discipline of the medical school and hospital. He used a score or more of specially devised techniques, even electronics, to solve special problems. The energy of Dr. Wolff's creative drive was infectious for all of us who worked with him. Every day brought new ideas and fresh excitement.

He constantly reminded us that headache is one of the commonest complaints of civilized man, and certainly one of the most distressing of human discomforts. Without discrimination it hits young and old, male and female, rich and poor, the world around. In the Brisbane, Australia Newspaper of May 17, 1969, an AP-Reuter Dispatch comments about headache: "Mary Tudor, 16th Century Queen of England, had it — the fighting Duke of Marlborough, John Churchill had it — and our own Princess Margaret has it."

Headache in the broadest sense means any pain in the head. Harold Wolff chose to entitle his classic book *Headache and Other Head Pain.*[1] When the cause is not easily understood, a headache usually rouses concern in the sufferer out of all proportion to its intensity. This is doubtless because of the importance of the head. In fact, the same anxiety accompanies pains in the region of the heart. It should be emphasized that the intensity or frequency of headache in no way determines its cause or its significance. Headaches associated with ominous disease, such as brain tumor, may be relatively mild, whereas the most intense and frequently recurring head-

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Miss Goodell is with the Department of Neurology and the Westchester Division, Cornell University Medical College and the New York Hospital.

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* Adapted from Thirty Years of Headache Research in the Laboratory of the late Dr. Harold G. Wolff, as published in *Headache* 6:4, January, 1967.

ache of migraine may be compatible with general good health and long life.

The Frequency of Headaches

Of our present United States population of 205 million, more than 85%, or roughly 175 million people, have headache at one time or another, and fewer than 15% can honestly claim never to have had a headache. Although most headaches are neither frequent nor severe enough to require medical attention, nevertheless the American public spends close to half a billion dollars annually on headache remedies, and we are bombarded by the pharmaceutical industry who tell us about the relief they can offer for headaches of modern times. But headache certainly isn't only a modern problem as we have Sumerian tablets from 3000 B.C. describing one-sided headache and records from the 12th Century B.C. that the Egyptian healers had incantations to exorcise headaches. Perhaps we may yet find a million-year-old skull of *Australopithecus Africanus* with some holes bored for the relief of pain as we now have 1000-year-old skulls in the museum in Lima, Peru, showing just such a surgical procedure performed by the Incas.

However, when the 10 to 15% of headaches are frequently recurring and severe enough to send the sufferer to the doctor, no matter how miserable the patient may be, the chances are less than one in 200 that headache is due to tumor or to any other life-threatening cause. It is hard for the patient to understand how he can be so sick and yet be told by his doctor that there is nothing *really* wrong with him.

Serious doubts can be dispelled by careful history, a neurological examination, a brain scan, and air pictures, and for some by a carotid arteriogram When that rare brain tumor is found, the mechanisms of pain and its value in localization of the tumor have been summarized by Harold Wolff, and I quote: "Brain tumor headache is produced by traction upon intracranial pain-sensitive structures, chiefly the large arteries, veins, and venous sinuses and certain cranial nerves. There are two types of traction which operate singly or in combination: 1) local traction by the tumor mass upon adjacent structures, and 2) distant traction by extensive displacement of the brain, either directly by the tumor or indirectly by ventricular obstruction, ie, internal, or occult, hydrocephalus."[1,2]

The Headache of Brain Tumor

Although the headache of brain tumor is often *referred pain* from a distant intracranial source, it approximately overlies the tumor in about one third of all patients. In the absence of papilledema it is of greater localizing value. In two-thirds of such patients the headache immediately overlies or is near the tumor, and when unilateral it is on the same side as the tumor. These studies of brain tumor headache were made with Dr. Charles Kunkle.[1,3] And for studying the pain-sensitive structures inside the head with Dr. Bronson Ray, the Professor of Neurosurgery at Cornell University Medical College, we stood patiently by during some 45 surgical exposures of lesions of the brain under local anesthesia, taking notes on patients' reports of pain, and making sketches to record source and reference of pain as Dr. Ray stimulated structure after structure with each opportunity offered.[1,3,4] (Figure 1)

Muscle Tension Headaches and Vascular Headaches

But brain tumor headaches, as already stated, are rare in the usual doctor's practice. The vast bulk of headaches are muscle tension headaches and vascular headaches. The most troublesome of the latter are migraine headaches. Muscle tension headache is not usually intense but may be annoyingly persistent and is very common. It may not always begin with pain in the head, but in fact the first sign of an impending headache may be stiffness and soreness in the back and shoulders radiating up over the back of the head as though a tight band were encircling the head, as in a vise. Muscle contraction can produce pain in two ways.[1,5]

Sudden powerful contractions are responsible for the pain of Charley horse, limb fractures, or a "stitch" in the back. Headaches rarely stem from this type of exaggerated contractile activity. Most headaches are associated with a *sustained* muscle contraction of moderate degree that may not be obvious. The

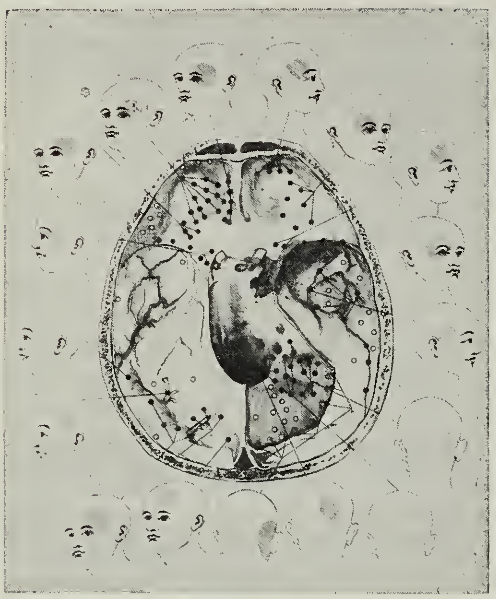

Figure 1

The dural floor of the skull, the tentorium cerebelli, and the adjacent venous sinuses and venous tributaries: hollow circles indicate points of stimulation without pain; black dots indicate points of stimulation causing pain. The diagrams of heads show the area of pain following stimulation of the dura of the floor of the anterior fossa; the middle meningeal artery; the dura of the floor of the posterior fossa; the inferior wall of the transverse sinus: the superior wall of the torcular herophili; the superior wall of the transverse sinus and upper surface of the tentorium cerebelli; and the inferior cerebral veins.

precise mechanism responsible for pain under these circumstances is not clearly established, but it appears to contain at least two elements: 1) the production of waste products of muscle contraction that may provide a chemical stimulus to pain endings, and 2) the failure of waste products to be flushed out of local tissues because of a reduction of blood flow that results from squeezing of blood vessels by contracted muscle and vasoconstriction. Simons and Day pointed out that pain in any part of the head would give rise to muscle contraction, which could then be a secondary source of pain. [1,5]

Injection of a small amount of 6% saline into temporal muscles gave rise to intense pain locally with aching muscle contractions elsewhere which often outlasted and were more intensely painful than the pain from the primary source of noxious stimulation. (Figure 2) It was then suggested that muscle contraction could be reflexly induced and secondary to noxious stimulation. This could in part explain the headaches associated with diseases of the eyes, the teeth, the nose, the paranasal spaces, the cervical vertebrae.[1,2,5]

But by far the largest number of muscle tension headaches occur as part of a perfectly healthy person's attempts to cope with the challenges and frustrations of daily life. For instance, you may have worked over your income tax report for long hours for several evenings after full days of work. Then you discover a mistake in addition that throws every calculation off — you must get new forms and do it all again. The muscles at the back of your head and neck, and down your back and across your shoulders are tight and sore and your *head* aches. Such muscle tension occurs commonly in association with excessive alertness as with driving an automobile for hours through heavy traffic, or with apprehension, or with a persistent desire to walk out of, get rid of, or do something about a troublesome situation that rouses considerable resentment. Patients who have muscle tension headache seem to be constantly carrying too heavy a burden, or to be poised to take action, from which they hold themselves back instead.

Some individuals are plagued for long periods of time or even more or less continuously by muscle tension headaches. The precipitating circumstances may not have been recognized, and indeed the person may not even be aware of the real nature of his problems or of his difficulty in coping with them. He may say, "Whatever problems I have, I keep tucked away." Such people are most often depressed and bored to a considerable degree, and some of them may nurse chronic anger and resentment toward a life situation devoid of satisfaction or rewards. The manifestation of emotional disturbance in many may not be evident because they maintain a bland facade, but they may give it away by excessive smoking and too many cocktails. There may be only a lack of zest and enjoyment of life — which the

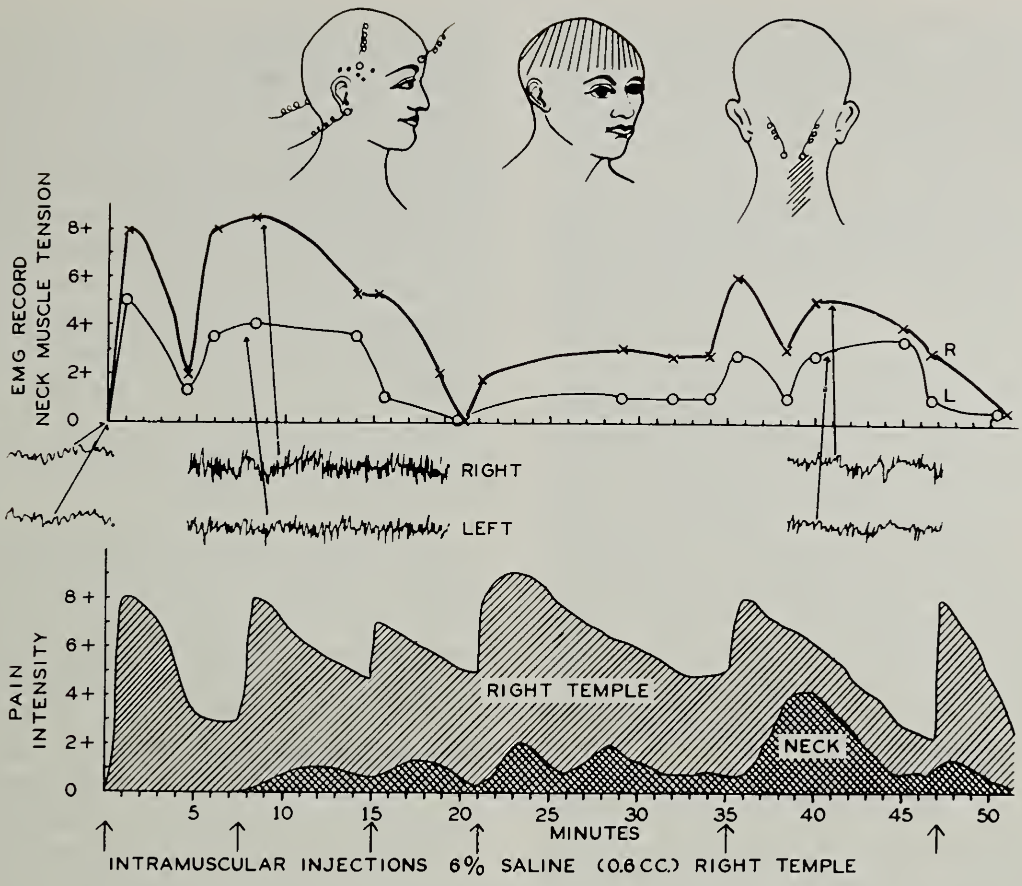

Figure 2

Demonstration that pain in the head induced locally in the right temporal region causes marked muscle contractions and pain in the neck.

patient, of course, attributes to his persistent headache. Discussions with a skilled physician will usually turn up antecedent situations that have placed undue demands on him, tasks that have become unpalatable, competition that was "too much" for him, interpersonal relationships that have soured, lack of support of loved ones or close associates, frustrating circumstances that are confining or unsatisfying and yet that must be endured. Apart from the symptom of headache there may also be dryness of the mouth, poor appetite, indigestion, difficulty in sleeping, and easy fatigability.

Before launching into the *piece de la resistance* of this paper, which will be Harold Wolff's investigations of vascular headaches, let me say a word about chronic post-traumatic headache, at some time a real nuisance in every physician's practice. It it, for the most part, muscle contraction headache. I will quote directly from the work of Harold Wolff and Donald Simons:[1,6]

"Between one-third and one-half of all persons who injure their heads sufficiently to warrant hospitalization develop chronic post-traumatic headache. The vast majority of patients with post-traumatic headaches that persist or recur for long periods of time after head injury have no intracranial abnormalities to explain their headaches. Sixty-three patients were studied, most of whom had sustained their head trauma in a military situation. All had headaches described as steady pressure sensations or aching pain in a cap- or band-like distribution. Fifteen of the 63 had also a circumscribed, relatively superficial tenderness at the site of injury or in a scar. Head pains of this type, ie, muscle tension, had recurred from a few months to 14 years in our series of patients, and were usually intermittent, varying from a few hours to ten days in duration. Four of the 63 had also a vascular type of headache. Thus 44 had only the muscle-tension type of headache.

"According to several observers, the incidence of headache lasting more than two months after injury was significantly high in those patients who were psychoneurotic prior to the accident; examination of our 63 patients by interview and two psychometric tests revealed four-fifths to have been psychoneurotic before they sustained head injury and developed their anxiety about the implications of the accident. Whether or not the brain was damaged, whether or not late or secondary sequellae would occur, whether or not the nervous system would be able to "stand the strain" of future effort, concentration and stress, and whether or not they would be able to collect compensation caused a sustained state of tension and fear.

"Danger of threats to the integrity of the head because of the implications concerning brain, initiative, alertness, and intelligence in our society, jeopardized the security of the moderately insecure, and seriously undermined the poorly adjusted. The associated reactions of anxiety, resentment, anger, feelings of being caught, despair, depression, frustration, and prostration were accompanied by contractions of skeletal muscles and vasomotor reactions that resulted in headache. The occurrence of the headache aroused fresh anxiety and convictions of impending catastrophe with ever-smoldering anger and resentment at the bad turn of their fate. The vicious cycle thus established often could continue for an indefinite period."

Interest in the Nervous System

Harold Wolff's first and foremost interest was the nervous system — its functions and dysfunctions.[7,8] He had a clear conception of the participation of the nervous system in man's ills. From his neurological training with Stanley Cobb, the late Professor of Psychiatry at Harvard Medical School, and Foster Kennedy, the late Professor of Neurology at Cornell University Medical College, and from his work on cerebral circulation at Harvard, he early asked the question, "How do the cerebral blood vessels, many of them covered with a network of nerve fibers, participate in migraine headache?" From his experience with Otto Loewi in Graz, Austria, and with Babkin,[9] Gibbs,[9] Maurice Levine, of Harvard Medical School, Clark[10] and Cattell[10] in New York, on the humoral transmission of nervous activity, his curiosity went to work to clarify the neurogenic control of vasoconstriction and vasodilation in migraine headache — questioning and thinking that were to carry him far in formulating the broad role of the nervous system in all disease.[7,8]

In 1932 Dr. Wolff was fresh from work with Pavlov in his conditioned reflex laboratory in Russia and from two years of research and training in psychiatry at Johns Hopkins with Adolf Meyer where he had continued his work on conditioned reflexes with Horsley Gantt[11] and on delirium with Desmond Curran.[12] At this early period he had begun to spell out the protective and defensive reaction patterns of individual behavior that lead to disease, and the meaning of precipitating events and environmental setting in illness. He was particularly interested in the personality features and reactions of persons with migraine headaches, and this was to be our first investigative preoccupation at the New York Hospital in August 1932.[1] At this point it was not safe for my friends to mention their headaches as I immediately elicited a description of their ailment, their problems, and personalities. We thus enriched our collection with some rare characters, all the way from a bank president and a trapeze artist, to a milk man who gave perfect service with a one-horse delivery cart, but who, when promoted to a two-horse wagon with a helper who made mistakes, was plagued with migraines.

Characteristics of Migraine Sufferers

Scores of subjects suffering from these vascular headaches called migraine and characterized by painful dilation of cranial arteries contributed protocols to our study, revealing their dominant personality features and reactions to be feelings of insecurity and tension, manifested chiefly as inflexibility, conscientiousness, ambition, and perfectionism, with easily hurt feelings and inevitable reactions of frustration, anger, and resentment. Dr. Wolff, who had mild migraine himself, knew what he was saying when he wrote: "The elaboration of a pattern of meticulous perfectionism for dealing with feelings of insecurity begins early in childhood. The individual with migraine aims to gain approval by doing more than and better than his fellows through application and hard work and to gain security by holding to a stable environment and a given system of excellent performance, even at high cost of energy. This brings increasing responsibility and admiration but gains little love, and greater and greater resentment at the pace which he feels obligated to maintain. Then the tension associated with repeated frustration and sustained resentment is often followed by prostrating fatigue, the setting in which the migraine attack occurs."[1]

One should not get the idea that the migraine personality is not attractive. Indeed, migraine patients are almost always sought-after, exemplary citizens — responsible, conscientious and reliable. But sometimes they get tangled in their own virtues. Take one woman patient, for instance, held in high regard in her community. She was secretary or treasurer of several organizations. But in the laboratory she bitterly complained of the increasing severity of her headaches and confessed her complete frustration and anger over her youngest child. "Everyone expects so much of me," she said, "and I expect a lot of her."

Our resident, Robert M. Marcussen,[1] was able to precipitate a typical attack of migraine by discussing unsympathetically how her child defied her every attempt to mold her into a neat and studious person. Under these circumstances of the doctor's implied criticism, intense feelings of anger and guilt were aroused, and discussions lasting approximately one hour were followed by migraine headache — intense throbbing pain on one side of the head, accompanied by nausea and vomiting. It was terminated by ergotamine tartrate administered intramuscularly. (Figure 3)

Recently my travel agent, (and I can't imagine anyone more perfect in the arrangement of foreign travel), confessed to having fre-

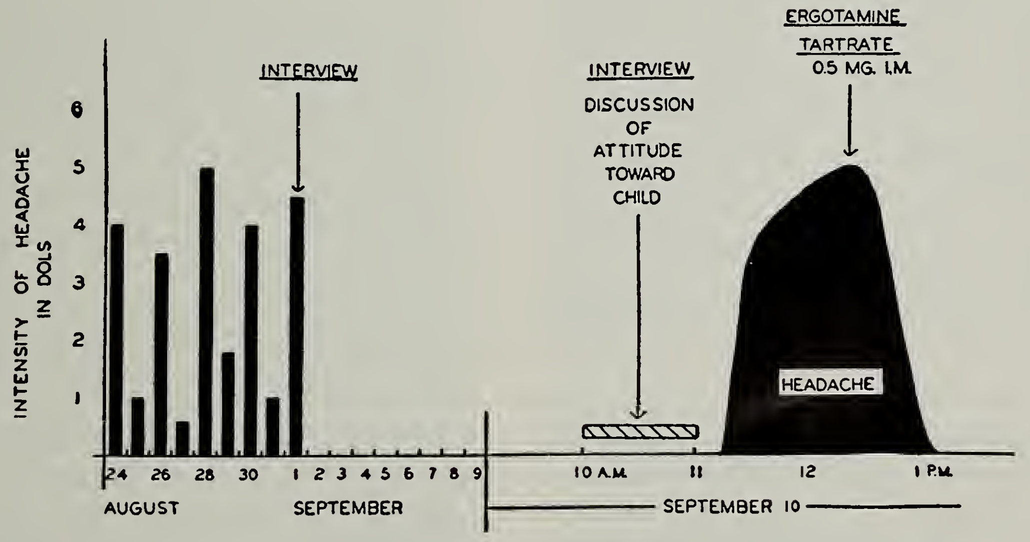

Figure 3

Experimental precipitation of a migraine headache attack in a setting of mounting tension by the introduction of a topic arousing conflict, anger and guilt. Initial interview on September 1, by dispelling guilt and conflict, reduced the frequency and intensity of attacks. The subsequent interview, intensifying these feelings, precipitated the headache.

quent migraine headaches. "You see," he said, "I get fighting mad at least five times a day at the sloppy way people do things." This perfectionistic, successful man finds it increasingly difficult to delegate responsibility even to those he pays well to help him. "My trouble is," he says "I wear myself to a frazzle making sure that every detail is correct. It's my short anger fuse because people don't do things the way I want them done that gives me migraines. That I know."

In short, certain individuals seem to have a predisposition and psychobiologic equipment which makes them prone to sustained and pernicious emotional states, involving perfectionism, frustration, resentment, anger, guilt, and fatigue. During such states, labile physiologic mechanisms set off the chain of events constituting the attack of migraine. This was essentially what Dr. Wolff said in 1933, and it has been bolstered through the years with evidence from hundreds of patients.

Migraine — A Familial Trait?

Whether this predisposition to migraine could be a family trait was a natural question to ask. So in 1953 we made a systematic study of the familial occurrence of migraine in 119 family trees. We found many families with migraine occurring in two or more generations, and a few had well documented evidence of migraine in five generations. Data were analyzed according to genetic concepts and revealed significant evidence of the hereditary character of migraine. It was also shown that the inheritance of the trait is through a recessive gene with a penetrance of approximately 70%.[1]

Migraine headache commonly occurs when hereditarily susceptible persons attempt to control feelings of anxiety and resentment by means of organized and intense activity. Headache is thus a cranial vascular consequence of their way of life. So predictable is this behavior pattern that the interested physician can document it in nearly every migraine patient he examines.

Also, through the years, the peculiar lability of the cranial vasculature in migraine subjects as compared to those who do not have headaches was observed in a variety of ways. The extreme variability of temporal artery pulsations from a headache-free period through the phases of an attack was demonstrated in the work of Marcussen, Kunkle, and Tunis.[1] It was Ostfeld and Reis,[13] Dalessio,[14,15] and others who showed that the sensitivity of conjunctival vessels to nor-epinephrine was vastly different during migraine attacks from that in headache-free periods.

More recently Dunning and Patterson have added evidence for the peculiar sensitivity of the intracranial vessels of migraine patients by corroborating Dr. Wolff's warning of serious complications from carotid arteriography, especially during or shortly after an attack.[16] In our study, among 26 patients with vascular headache of the migraine type, the incidence of complications from arteriography was 19%, as opposed to 11% among 88 patients with occlusive cerebral vascular disease, and less than 1% in 231 patients with brain tumor. Other workers have reported similar observations.

Part II of this paper will appear in the June issue of the *Delaware Medical Journal.*

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EFFECT OF RECENT SUPREME COURT DECISION ON DELAWARE'S ABORTION LAW

OPINION TO:

Hon. Albert J. Stiftel
President Judge of Superior Court and President, Medical Council of Delaware

Hon. Daniel E. Weiss
State Representative

OPINION BY:

James T. Perry
Deputy Attorney General, State of Delaware

QUESTION:

What are the holdings of the two recent Supreme Court decisions relating to abortion [*Roe v. Wade*, -US-, 41 L.W. 4213 (1973); *Doe v. Bolton*, -US-, 41 L.W. 4233 (1973)], and how do they affect 24 *Del. C.* §1790 et seq.?

ANSWER:

The Supreme Court has held that the decision to terminate a pregnancy is a right of privacy protected by the Fourteenth Amendment's guarantee of personal liberty. An explanation of that holding, its application, and effect on 24 *Del. C.* §1790 are set out below.

This office has been requested to issue an opinion on the effect of the two recent United States Supreme Court decisions, *Roe v. Wade*, -US-, 41 L.W. 4213; *Doe v. Bolton*, -US- 41 L.W. 4233 (1973), relating to the regulation of abortion, on statutory requirements currently in force in Delaware. (24 *Del. C.* §1790, et seq.)

I

Roe v. Wade, supra. considered a Texas statute which prohibited abortion except for the preservation of the mother's life. The Supreme Court held the Texas statute unconstitutional, reasoning that a woman's decision to terminate her pregnancy is a right of personal privacy guaranteed by the Fourteenth Amendment's concept of personal liberty. The Court held, however, that the right of privacy was not absolute and must be considered against compelling state interests. The broad ruling of the Court is that until abortion presents a greater threat than pregnancy and childbirth to the life or health of the mother, or until abortion threatens the potentiality of human life of a viable fetus, the state does not have authority to regulate the decision for or effectuation of abortion, except to require that it be performed by a state licensed physician.

In applying this broad ruling, the Court established the following standards of permissible state regulation:

(a) During the period of approximately the first trimester, the attending physician, in consultation with his patient, is free to determine that in his medical judgment the patient's pregnancy should be terminated. During this period the state has no authority to regulate the decision to terminate a pregnancy or the manner in which the termination is effected, except to require that an abortion be performed by a state licensed physician.

The Court reasoned that current medical information shows that an abortion in early pregnancy (prior to the end of the first trimester) represents less danger to the health of the mother than full-term pregnancy and childbirth. Since the only interests the state may protect are the health of the mother and the health of a viable fetus, the state cannot regulate or prohibit a procedure which is statistically less dangerous to the mother where no viable fetus is involved.

(b) After the first trimester of pregnancy, and prior to fetal viability, the state may regulate the abortion procedure to the extent that it reasonably relates to the preservation and protection of maternal health. At this point the risk of abortion to maternal health is greater than the risk of pregnancy and childbirth. At this stage, the state has a compelling interest in protecting maternal life and health and may regulate the abortion procedure to that extent. Examples of permissible state regulation are requirements as to the qualifications of persons who perform abortions, the licensing of those persons, requirements as to the facilities in which the procedure is to be performed, and the licensing of those facilities. *Roe v. Wade*, -US- 41 L.W. 4213, (1973). This list is not intended to be exhaustive but is offered to give examples of regulations the state may undertake to preserve and protect maternal health.

(c) At the time the fetus becomes "viable," the state has an "important and legitimate interest in potential life." At this stage the state has a compelling interest in protecting fetal life and may prohibit abortion during that period except when it is necessary to preserve the life or health of the mother.

The Court rejected the argument that a fetus is a "person" within the language and meaning of the Fourteenth Amendment and concluded that the word "person" does not include the unborn. However, the Court stated that a pregnant woman could not be isolated in her right of privacy and that at some point in time the state had an interest in protecting an unborn. The state's interest in protecting an unborn arises when a fetus becomes "viable." A fetus is "viable" when it is " . . . potentially able to live outside the mother's womb, albeit with artificial aid. Viability is usually placed at about seven months (28 weeks) but may occur earlier, even at 24 weeks." *Roe v. Wade*, -US- 41 L.W. 4213, 4227-28 (1973).

II

In *Doe v. Bolton, supra.* the Court examined the Georgia abortion statute. The provisions of that statute, like those of Delaware, bring it into the category of liberalized abortion laws recently adopted by some states. In *Doe*, the District Court struck down provisions of the Georgia statute which limited abortions to cases in which, (1) a continuation of the pregnancy would endanger the life or seriously and permanently injure the health of the mother; (2) the fetus would very likely be born with a grave, permanent, and irremediable mental or physical defect; (3) the pregnancy resulted from forcible or statutory rape. The District Court held that while the state could regulate the quality of the decision to abort and the manner of its execution, it could not prescribe the reasons for abortion as this violated a woman's constitutional rights of privacy and personal liberty. *Doe v. Bolton*, 319 F. Supp. 1048 (N.D. Ga. 1970). The Supreme Court affirmed the District Court holding and went on to consider other provisions of the Georgia statute.

The Court examined provisions of the statute requiring a woman desiring an abortion to certify that she was a resident of the state and requiring her physician to certify that he believed the woman to be a bona fide resident of the state. The Court found these requirements violative of the Privileges and Immunities Clause of the Constitution.

The Georgia statute also required abortions to be performed in a hospital licensed by the State Board of Health and accredited by the Joint Commission of Accreditation of Hospitals. The Court found the requirement that abortions be performed in a hospital invalid because it did not exclude the first trimester of pregnancy from the scope of its regulation.

The Court further found that there was no showing that only licensed hospitals, and not other licensed institutions, could satisfy the health interests subject to state regulation. Similarly, the Court found that the accreditation requirement did not withstand constitutional scrutiny because accreditation had to do with hospital standards generally and had no particularized concern with abortion as a medical or surgical procedure.

The Court, however, specifically acknowledged the right of the state, after the first trimester, to adopt standards for licensing all facilities where abortions may be performed. The standards must, however, be legitimately related to areas of permissible state regulation. The Court in *Doe* found that neither the accreditation requirement nor the hospital requirement related to the state's interest in insuring the quality of the operation or the protection of the patient.

The Georgia statute also required that the physician's decision to perform an abortion be concurred in by at least two other physicians and receive the further approval of a hospital abortion committee.

The Court found the requirement of concurrency by two physicians unconstitutional as having no rational connection with the patient's needs and unduly restrictive of the physician's right to practice. The Court further found that since the decision to abort is made by the patient's personal physician prior to reaching the committee, the additional requirement of committee approval infringed on the woman's right to receive medical care in accordance with her licensed physician's best judgment and the physician's right to administer it.

III

The remaining question is what effect these decisions have on Delaware Statute, 24 *Del. C.* §1790 et seq.

Section 1790(a) requires an abortion to be performed by a licensed physician in an accredited hospital upon authorization by a hospital abortion review authority. A pregnancy may be terminated only where (1) a continuation of the pregnancy is likely to result in the mother's death; (2) there is substantial risk that the child will be born with a grave mental or physical disability or mental retardation; (3) the pregnancy resulted from rape or incest; or (4) continuation of the pregnancy would involve a substantial risk of permanent injury to the mother's physical or mental health.

As previously discussed, the state may not regulate abortions during the period of the first trimester except to require that it be performed by a state licensed physician. *Roe v. Wade, supra.* The hospital accreditation requirement, the requirement of approval by an abortion review authority, and the conditions upon which a pregnancy may be terminated were held invalid in *Doe v. Bolton, supra.* Thus, section 1790(a) is stricken in its entirety after the phrase, ". . . or aid or assist or attempt a termination of a human pregnancy, . . ."

Section 1790(b)(1) prohibits the termination of a pregnancy after 20 weeks of gestation. This section is stricken in its entirety as it proscribes abortion during the second trimester, prior to the occurrence of fetal viability. At 20 weeks, the state may only regulate abortion to the extent that it reasonably relates to the health of the mother. *Roe v. Wade, supra.*

Section 1790(b)(2) requires two physicians to certify that one of the conditions of §1790 (a) exists, except in the case of rape. It also requires certification by a psychiatrist to the abortion review authority in cases where a pregnancy is to be terminated because of the mother's mental or emotional condition.

As previously discussed, the conditions set forth in section 1790(a) are invalid as is the requirement of a hospital abortion review authority. In *Doe v. Bolton, supra.* the Court also struck down a two-doctor-concurrence provision as having no rational connection with the patient's needs and unduly restrictive of the physician's right to practice. That holding invalidates the certification requirement of §1790(b)(2). Section 1790(b)(2) is stricken in its entirety.

Section 1790(b)(3) requires written parental consent to be filed with the hospital abortion review authority in the case of an unmarried female under the age of 18. This provision is stricken to the extent that it requires the consent to be filed with a hospital abortion review authority. In *Roe*, the Court reserved decision on the father's rights in the abortion decision as well as consent requirements for minors. *Roe v. Wade*, -US- 41 L.W. 4213, 4229 n.67 (1973). Thus, it appears, at this time, that parental consent for unmarried female minors is a permissible area of state regulation inasmuch as it affects the quality of the decision to terminate a pregnancy. Such a requirement does not interfere with a patient's right to terminate her pregnancy but insures that the decision is made by persons capable of making such a decision. The phrase, ". . . with the hospital abortion review authority . . ." is stricken, and the balance of §1790(b)(3) remains.

Section 1790(c) requires the hospital abortion review authority to file reports with the State Board of Health of each abortion procedure performed. The requirement of an abortion review authority is stricken, and this section is therefore stricken in its entirety.

Section 1791(a) permits any person to refuse to participate in procedures which result in the termination of a pregnancy. The Court in *Doe* made reference to a similar provision in the Georgia statute and approved the freedom of individuals to refrain from participation in procedures to terminate pregnancy. *Doe v. Bolton*, -US- 41 L.W. 4233, 4238-39 (1973). Section 1791(a) remains in its entirety.

Section 1791(b) provides that no hospital, hospital director, or governing board shall be required to permit the termination of pregnancies within its institution. The Court, in *Doe*, in referring to a similar provision of the Georgia Statute, stated that "These provisions obviously are in the statute in order to afford appropriate protection . . . to the *denominational* hospital." (Emphasis added) The Georgia statute, like §1791(b), does not refer to "denominational" hospitals but only mentions "hospitals."

In referring to "denominational" hospitals, the Court was probably drawing a distinction between purely private hospitals and those receiving state or federal funds. This reference raises complex issues concerning the ability of hospitals receiving state or federal aid to refuse to perform abortions. This question will not be discussed at this time except to point out the potential problem and will be deferred for consideration to a later time. For the present, §1791(b) remains in its entirety.

Section 1791(c) provides that a person shall not lose any privileges or immunities for refusing to submit to an abortion, nor shall any person be deprived of any public benefit for refusing to submit to an abortion. This provision is in accordance with the express holding of *Roe* to the effect that the decision to terminate a pregnancy is a private matter between physician and patient. Section 1791(c) remains in its entirety.

Section 1792 prohibits the sale of drugs or medicine and the giving of advice or counsel or information for the purpose of obtaining a termination of a pregnancy. It also prohibits anyone from knowingly assisting or causing the termination of a pregnancy by any means unless the termination of the pregnancy is authorized by section 1790. As previously discussed, the only remaining requirement of section 1790 is that the procedure to terminate a pregnancy be performed by a state licensed physician. With this qualification, section 1792 remains in its entirety.

Section 1793 prohibits any person from terminating a pregnancy who has not been a resident of the state for at least 120 days. This requirement does not apply to a female who worked in the state at the time of conception, or whose spouse worked in the state at the time of conception, or to a female who has been a patient of a physician in this state prior to conception, or where continuation of a pregnancy is likely to result in the mother's death. The Court in *Doe* struck down the residency requirement of the Georgia statute as violative of the Privileges and Immunities Clause of the Constitution. Section 1793 is stricken in its entirety.

APPROVED BY:

W. Laird Stabler, Jr.
Attorney General

SYNOPSIS OF ABORTION OPINION

James T. Perry

I. Permissible areas of State regulation of abortion.

A. First-Trimester
Decision to abort is to be made by patient in consultation with the attending physician. The only requirement the state may impose is that the procedure be performed by a state licensed physician.

B. Second-Trimester

1. Prior to fetal viability — State may regulate the abortion procedure to the extent it relates to the preservation and protection of maternal health. State may prescribe qualifications of persons performing abortions and establish requirements for facilities in which the procedure is to be performed.

2. After fetal viability — At the time the fetus becomes viable, the State has an interest in protecting the potential life. The State may prohibit abortion except when necessary to preserve the life or health of the mother.

II. Effect of two opinions on 24 *Del. C.* §1790, et seq.

A. That portion of §1790(a) requiring an abortion to be performed by a State licensed physician remains.

B. That portion of §1790(b)(3) requiring the written consent of a parent or guardian in the case of an unmarried female under the age of eighteen remains.

C. §1791(a), which permits any person to refuse to participate in procedures which result in the termination of a pregnancy, remains.

D. §1791(b) provides that no hospital director, or governing board shall be required to permit the termination of pregnancies within its institution. To the extent that this refers to denominational hospitals, not receiving State or Federal aid, the provision remains. To the extent that §1791(b) applies to State-run facilities or facilities receiving State or Federal aid the situation is less certain.

E. §1791(c) provides that no person shall lose any privileges or immunities for refusing to submit to an abortion nor be deprived of any public benefit for refusal to submit to an abortion. This provision remains in its entirety.

F. §1792 prohibits the sale of drugs or giving of advice or information for the purpose of obtaining a termination of a pregnancy or assisting or causing the termination of a pregnancy by any means, unless the termination of the pregnancy is authorized by §1790. The only remaining requirement of §1790 is that the procedure be performed by a State licensed physician. With that qualification §1792 remains in its entirety.

These are the only remaining portions of the Delaware Abortion Law following the Roe and Doe decisions.

* * *

ADVENT OF THE JESUS FREAKS

They are young. They are zealous. They look like hippies. They have turned on to Jesus. They are as fanatic for the gospel as they once were for drugs and sex.

They come in every shape, size and color. They are "Jesus freaks," "Jesus people," "the Jesus movement," "The Jesus revolution," "the Jesus generation"—Bible-toting, Bible-quoting, Jesus-praising, convert-making, sin-forsaking, noisy, forward, persistent pests for Jesus' sake.

Lowell D. Streiker, Ph.D.

PRACTICE MANAGEMENT

Dividing A Group Practice's Income

Leif C. Beck, LL.B.

Undoubtedly the most enduring problem of group practices is how income should be distributed among the group members. Most management consultants are, in fact, convinced that inability to divide the income satisfactorily causes more dissension and dissolution in medical groups than all other factors combined. The effect often develops slowly, but if a segment of the group feels that it is underpaid, the dissatisfaction tends to grow until it threatens the group's continuation.

Despite the many critics of our present health care system, I do not believe most doctors are particularly money-oriented. Rather, physicians tend to be highly intelligent and highly professional people with an inordinate amount of pride and self-reliance. The natural result is an unusually well-developed ego, which is common to other self-oriented individuals as well — entertainers, athletes, many lawyers, for instance.

Under these circumstances, compensation often rises above its importance as mere money. It becomes instead a measure of relative personal worth and a reflection of the member's importance to the group. Perhaps it is unfortunate that relative incomes can so easily be compared and take on importance far in excess of what the earners really are contributing, but the situation is common. Hence, dividing group income involves matters of personal ego as well as economics, which makes the subject an extremely touchy problem in group practice.

The Basic Alternatives

The two basic alternative income division systems are (1) simple percentage division and (2) productivity methods. Each alternative has certain advantages and disadvantages which should be recognized, and the resulting method a group chooses could be either pure system or any variation mixing their features into a special formula. If a special formula is developed, however, I feel strongly that a medical group should keep it fairly simple to understand and easy to administer. A highly complex formula, involving special bookkeeping efforts, tends merely to cause artificiality and confusion, thus defeating the formula's presumed incentives.

Percentage Division

The simplest of all methods, of course, is for the participants simply to divide the income from their efforts equally. Other groups divide income in fixed percentages which are not equal, perhaps in recognition of seniority, time involvement, special training, etc. In either case, distribution of income is in a *predetermined*, fixed ratio—a straight percentage division.

A percentage method has the advantage of offering the doctor-members a *group* incentive. Each member will prosper so long as the venture produces sufficient income, regardless of which individual doctor actually performed the work. Hence, the doctor-members should feel free to have patients treated by various other doctors in the group for advantages in scheduling, special experience, and the like. OB-GYN men, for instance, can see their patients alternatively or as they consider most useful and can assign deliveries according to their working schedules without concern of any adverse income effects. Other specialty surgeons in joint practice can set their oper-

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Mr. Beck is President of Management Consulting for Professionals, Inc. of Bala Cynwyd, Pennsylvania.

ating schedules for the most efficient use of their members' time and talents. Similarly, one man's contributions to administering the office or performing other "non-chargeable" functions will not penalize him as opposed to his partner who is seeing more patients at the time.

Percentage division tends, therefore, to encourage a cooperative effort for the good of the group. It minimizes competition between the members since there is no direct financial reward for seeing more of the group's patients, producing more of its billings, etc.

Arbitrary percentage distributions generally work satisfactorily in groups having strong common denominators of age, work motivation, and professional qualifications. They particularly work well when the potential income is high enough to defeat most desires to compete for more of the available income. Those practices which involve the most patient interchange, such as obstetrics, are particularly likely to use simple divisions satisfactorily. The method has the advantages of being simple in concept and easy to administer, and for these reasons it is by far the easiest way to resolve the income division problem.

Unfortunately, however, various members of a group rarely make equal contributions to the group's financial success. So long as the differences are small, the members may overlook them; but as these differences become larger and continue to exist, they will tend to become divisive factors. One doctor might, for instance, be taking more vacations or developing himself to more non-cash producing professional activities (teaching, society work, etc.), while the other doctor is seeing more and more of the patients. Or one doctor may be increasing his efficiency, while the other doctor tends to spend more time with each patient. Regardless of which doctor is "right" in his approaches to his work, the differences will tend to grow. This, of course, is the disadvantage to a straight percentage division method.

Productivity Division

The opposite approach is to compensate each member in direct proportion to the amount he has contributed to the group's income. The common measure of such contribution is the amount of fee charges recorded on the group's books. Hence, if a two-man partnership has net income (after expenses) of $90,000 and the books show that Dr. A's charges during the year totalled 60% of the total, then he would be entitled to $54,000 of compensation. If in the succeeding year Dr. A reduced his activity and produced a lesser share of the total charges, his share of that year's income would be proportionately less.

Besides rewarding a member for his financial contribution, a productivity division has the additional advantage of being *self- adjusting*. A partner's share of his group's income will thus vary from year to year just as his efforts may vary. Hence, if an older partner wishes to take extra time away from the practice, his compensation would presumably decrease proportionately without any negotiation. This is often important to the junior partner, for frank discussions on the subject are often difficult if they are held at all. A method that permits adjustment without the confrontation can thus be invaluable.

The majority of medical management consultants, myself included, prefer income division methods based at least in part on productivity. It should, however, be recognized that such methods also have disadvantages. The prime problem is that compensation based on productivity can create a competition among partners for the available work. It thus tends to reward one for creating *dollars* while ignoring one's other, less measurable, contributions to the group. The senior physician, for example, whose hospital and professional activities create referrals performed by his junior partners would not be recognized for his contribution. Nor would the managing partner of a medium-sized group who spends 20 per cent of his time assuring that the joint practice runs smoothly and efficiently.

Productivity division also requires careful bookkeeping of patient charges. This should not be a disadvantage at all because I believe any practice should have this information whether or not it is needed for income division purposes. The group's total charges for a period is an indication of how busy its office was, and it also is a means of predicting how much cash will be received in a succeeding period (when the charges have been billed and payments are received). Furthermore, a group should record its members' relative production even if they share income otherwise, for only by having the information can the members recognize changes or inequities before too much dissension develops.

Combined Methods

A highly desirable solution to the problem of equitably distributing income is a *combination* of the two described methods. The group practice might thus obtain the strongest advantages of each method and thus offer more realistic incentives to its partners.

The simplest example of a group's combining the percentage and productivity methods would be one often recommended by advisors. Half of the net income of the practice would be divided among its partners equally (or in some other pre-determined percentages), and the other half would be divided in the ratio of the members' actual charges. In this manner, each partner has a strong incentive to make the overall group as successful as possible (regardless of which partner actually sees more patients), and he also has a personal incentive to produce. Since both group loyalty and individual ambition should be well-accepted and desirable attributes, the formula combining incentives for each should be a workable solution.

Variations on the 50-50 combination are limitless. I have several group practice clients, for instance, who divide 60 per cent of their income and then allocate the other 40 per cent according to productivity. This is simply based on their recognition that the entity's success deserves somewhat more emphasis than does the personal advantage. Other practices have gone the opposite way after analyzing the characteristics of their specialties, the "market" for their services, and, of course, their members' personalities.

A small practice (two or three partners) is likely to find a simple combination method to work very well. As the group becomes larger, however, the formulas tend to become more and more sophisticated. This is generally a desirable recognition that fairness among more individuals will require consideration of more factors. As an example, one well-known West Coast consultant has found the following to be a generally useful formula for partnerships in surgical specialties: 60 per cent is divided on a productivity basis, 28 per cent is split according to seniority (with a rise to equality in five years), and then 2 per cent goes to the managing partner to reward him for his extra effort.* In this formula, the percentage division (allocating the 28 per cent) is itself based on a variable.

Point Value System

Larger and often multiple specialty oriented groups sometimes extend the combination approach still further by adopting a "point value system." Such a system is intended to measure precisely the total contributions which all members make to the group's success, going beyond the comparatively simple concept of production. Thus, a point system might give credit for such items as educational and professional society activity, contribution of capital to the partnership, hospital staff leadership, age or years of practice, etc.

The elements of a point system are simple to describe. The various criteria adopted by the group are simply assigned "points," and then each member's points are totalled for the year. Income of the group for that year simply is divided among the members in the same ratio as his points bear to the total of all members' points. Under an illustrative method, one point might be awarded for each $100 of charges produced, ten points might be given for each year of specialty practice, and fifty points might be given for each specified medical society or hospital staff responsibility. A doctor who has been in his specialty for 12 years, who is chief of his hospital's department, and whose work produced $60,000

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*See Litvik, "The Trouble with a Senior-Junior Partnership," *Medical Economics,* Sept. 13, 1971, p. 180, quoting Richard V. Bibbero of San Francisco.

of charges that year would thus be allocated 770 points to decide his final share of the practice's net income for the year in question.

While the point value system attempts to evaluate each member's contribution to the group's overall success, it has one very serious flaw. The group's attempt to quantify relative values for such matters as senority, production, and professional status itself involves a negotiation between the partners. All too often, therefore, these different matters are assigned their points on a negotiated basis, and the partners might just as well have determined mere percentage divisions in the first place.

What is more, even if the point values are satisfactorily determined, such systems have other built-in disadvantages. First, as they become more and more sophisticated, they tend to become less well understood by the doctors involved. This difficulty may well defeat any incentive effect such systems might have been intended to produce. Second, point systems tend to require special and often extensive accounting work, not to speak of the amount of members' time devoted to tabulating their relative point situations. All in all, therefore, while point value systems seem excellent in theory, they have been far less successful in fact.

Conclusion

This article has been intended to describe basic approaches to the extremely tough problem of dividing income. Actual formulas which are in existence and which have worked well are legion, but the important point to remember is what has been successful to one group may be absolutely wrong for another. The problem simply requires honest and candid attention by all the prospective group members. It should also require some periodic attention even after the group has been formed, for partners should act promptly to recognize and resolve any dissatisfaction as soon as it develops. Income division disputes are likely to grow in intensity as time passes, and hence prompt attention might save an effective group practice from dissolution.

* * *

CLEARING

R. Douglas Sanders, M.D.

Physicians are invited to send the Journal photographs of their art work: brush, camera, pen, chisel.

Editorials

TUBERCULOSIS CARE IN GENERAL HOSPITALS IN DELAWARE: WHY NOT AND WHEN?

For many years, especially since the advent of modern chemotherapy, we have agreed that the tuberculosis patient could be treated in a general hospital. Unlike the old days, the acutely ill TB patient now responds to treatment in a matter of days, with improvement in his sense of well-being and relief of symptoms. He soon begins to gain back lost weight and take an interest in life once more. Also, of importance to the hospital staff, the patient's positive sputum status quickly reverts to negative and the danger of infection is minimized. His hospital stay may be of short duration (depending on his response), and he then is sent home to continue under health department supervision and further chemotherapy.

That all sounds very easy, doesn't it? There is no valid reason why this won't work, so why aren't we doing it?

Could the official health agency be blocking this move? Certainly not! The Division of Public Health through the Emily P. Bissell Hospital has long recommended this shift. As long as three-and-one-half years ago, the Inter-Agency TB Committee reviewed the dramatically rising cost of keeping less than one hundred TB patients at Bissell Hospital, and estimated that Delaware spends for this care two or three times what would be spent in a general hospital. Since 1968, new services have been added to Bissell Hospital, so that space is now occupied also by the Alcohol and Drug Detoxification Unit and the Rehabilitation Center for Disabled Adults. The Tuberculosis and Respiratory Disease programs take up the remainder of the space.

Could the medical profession be against this move? Again a resounding no! The leading chest specialists in Delaware have been asking for some time when this change would come about. Physicians are convinced of the scientific basis for concentrating tuberculosis treatment in general hospitals and health department clinics and understand that most of the newly-discovered active TB cases will respond well. They know that the chronically ill patient with persistently positive sputum is certainly an exception to the rule.

Could the hospital administrators object to taking on this burden? Certainly not, especially if the hospitals are adequately reimbursed for their services. Hospital administrators and their boards are keenly aware of their duty to provide community service and to maintain a favorable public image. Adequate financial compensation would be the only question.

Could the patients be against treatment in their own nearby community hospital rather than the oftentimes far-away sanitorium? The answer again is a resounding no! The patient's only concern might be financial, but any state program must meet this question. Those patients who have no health insurance should not be expected to suffer because of their unfortunate financial condition.

Could hospital employees be expected to react against such a change? Here I must answer that many employees still fear tuberculosis and would want to give TB patients the "long distance" treatment with mask and gown. Even under the best of circumstances, the patients may be terribly depressed by the hands-off attitude of nurses and other staff members. If our ideas for a new program are to have any success, it is imperative that the personnel at general hospitals be provided small group, in-service education to effect a change in staff attitudes. I estimate that it might take as long as two years to complete this educational process, once started.

A problem experienced in other states has been finding suitable jobs for former sanitorium employees. In Delaware, with Bissell Hospital continuing to function, and almost no displacement of personnel because of alternate uses for the institution, this is not apt to be a problem.

The general hospitals in this state are so situated as to fit very well into such a plan. No patient need be far from home. No hospital need accept so many TB patients as to occasion a "tuberculosis ward" (indeed, long-term segregation of these patients would defeat the purpose of better acceptance). No great expense would be necessary in preparing certain isolation rooms for the positive-sputum cases, as long as the ventilation is adequate.

Scattered throughout Delaware are a few chest physicians who may be willing to act as consultants to general hospitals and to oversee the admission and management of these few TB patients, with a suitable stipend and traveling expenses provided for performing this service. Patients who enter this program should be paid for by any third party insurance or by funds provided by the Legislature to the Division of Public Health for the patient for whom no insurance is available. The state agency might also assume responsibility for the management of any acute problems which might arise during hospitalization. Naturally, elective surgical procedures would not be included.

It is conceivable that the State of Delaware could save a considerable sum annually by putting this idea (or something similar) into operation and transferring the care of tuberculosis to general hospitals. Any computation of saving would be based on comparative costs per patient in the two types of facilities multiplied by the number of TB patients presently in Bissell (47 at this writing).

In conclusion, I would add a few words of Dr. Donald C. Kent, Medical Director of the National Tuberculosis and Respiratory Disease Association, who says, "Now we need to do more than just write and talk and support. We must act, we must implement."

MAYNARD H. MIRES, M.D.

Dr. Mires was formerly Chief, Bureau of Disease Control, Division of Public Health, Department of Health & Social Services.

* * *

Letters to the Editor

To the Editor:

Before we get too far along the way in planning for the "medical curriculum" for the University of Delaware, practicing physicians must decide whether they want to support the concept of another medical school which will supply physicians for the general good of the country, or whether they want a medical school which will aim primarily at supplying physicians for Delaware's needs.

If what we really want is a school to help Delaware, then we must support Dr. Whitehorn's proposal that teaching of medical students must take place in *all* Delaware hospitals. For the students must be exposed to hospitals other than the Wilmington Medical Center; medical care in all our areas and all the hospitals of Delaware must be so upgraded that our future young doctors will want to practice there.

DAVID PLATT, M.D.

* * *

> "Many times a day I realize how much my own outer and inner life is built upon the labors of my fellow men, both living and dead, and how earnestly I must exert myself in order to give in return as much as I have received. My peace of mind is often troubled by the depressing sense that I have borrowed too heavily from the work of other men."
>
> *Albert Einstein*

Book Reviews

MENTAL HEALTH PROGRAM REPORTS-5 by Julius Segal, ed. DHEW Publication No. (HSM) 72-9042, Washington, D.C. U.S.G.P.O., December 1971, 388 pp. Price $1.75.

The National Institute of Mental Health (NIMH) has the mission of advancing mental health. To do so it engages in services related to research, to development of mental health manpower, and to the delivery of mental health services. It is an independent agency of the Health Services and Mental Health Administration of the Public Health Service. In 1969 its budget was $361,516,000 spent almost equally among the three functions enumerated above. It supports problem-oriented centers formed to study suicide prevention, alcoholism, crime and delinquency, narcotics and drug abuse, and community mental health. Since 1967 an annual volume has been issued to describe representative programs supported by the NIMH. The volume under consideration is the fifth of this series. In addition, some of these reports have been issued as an anthology related to the behavioral sciences and in another volume devoted to program reports related to children. The Institute also publicizes its work in a series of Research Project Summaries.

The NIMH recognizes that mental health in its broader connotation depends on the kind of society in which we live and describes the quality of the lives we live. The NIMH recognizes that improving the quality of life is a monumental problem and involves the whole fabric of society. The surface symptoms are indicated by the estimate that ten percent of the population require mental health services. Like charitable services, the highest level on which to deal with services for mental disturbance is to prevent the need for them.

It is for this reason that the scope of research and other programs is very broad. In the present volume of twenty reports, six deal with the needs of children; three deal with examples of systems of delivery of mental health services. The problems of leadership training, overpopulation, legal aspects of mental illness, long-term effects of LSD, and the lessons to be learned from studying the medicine man of the Navaho are subjects of single reports. A concluding section of six reports deals with the fascinating and medically significant aspects of the new techniques being developed under the rubric of Biofeedback and includes a report of research on Transcendental Meditation (TM).

In Biofeedback modern instrumentation is used to discover the relationships between physiology and psychology. Relationships between the nervous and smooth muscle systems, and feelings and thoughts, up until now thought to be controlled only by drugs or surgery, are beginning to be brought under control using simple learning principles in a systematic manner.

The Program Reports on Biofeedback introduce a subject which has recently begun to be publicized. Biofeedback refers to knowledge of internal states which has been fed back to a person visually or auditorally by instrumentation monitoring physiological processes. Such knowledge can eventually be used to control accompanying feeling states and body functions. For example, if a person sees a light which flashes when he is emitting alpha waves, he can soon learn to relax and bring the light on. If a light is triggered by lowered blood pressure, he can learn to lower his blood pressure by being aware of the feeling state which brings on the light.

The experimental and clinical possibilities of these new techniques are exciting. Medically the use of drugs or surgery can be replaced by training to control feeling states which control psychosomatic ailments.

The reports are all well written by distinguished science writers in an easily readable fashion.

Malvin Gelof, Ph.D.

Dr. Gelof is Director of Psychological Services, Division of Public Health, State of Delaware.

President's Page

MANIPULATION, MANIPULATION, MANIPULATION

At the founding meeting of the AMA in 1847 the twofold mission of the medical profession was spelled out simply and forcefully: to advance the art and science of medicine and to protect the public health.

Concerning the second part of that mission —protection of public health—physicians as conservators of public health are bound to bear emphatic testimony against quackery in all its forms, particularly chiropractic.

Chiropractic is an unscientific cult because despite all the years of its questionable existence, it has not furnished a single shred of scientific proof for the hypothesis on which it is based. Instead of adopting the scientific course, chiropractic has devoted its time, energy, and money in pursuing a political course —evidence of which we see today in Delaware.

Until the last few years, the obligation to inform the Congress, the state legislatures, and the public about the health hazard posed by the cult of chiropractic has been borne almost exclusively by the medical profession. Medicine opposes chiropractic for the same reason it opposes all other forms of health quackery: to try to stop poorly trained people from doing things for which they are totally unqualified. Medicine must, medicine will continue to inform the public about the inadequacy of chiropractic to protect the public health. Every responsible health-connected agency in the country has condemned chiropractic as unscientific and dangerous. Ideally the Delaware statute legalizing this cult should be repealed to remove the cult's shield of legitimacy. It should be realized that no matter how high they are set, no matter how strictly they are enforced, licensure standards cannot redeem the scientific invalidity of chiropractic.

A three-judge federal court in 1965 held, in effect, that since chiropractic holds itself out as competent to treat the broad gamut of human disease, a state has the right to require that chiropractors, if they are to be permitted to practice as health care providers, must meet the same standards of education and training as doctors of medicine. Not one of the chiropractic schools has ever been able to meet even the most minimal standards of any responsible accrediting agency.

The recent report of the Chiropractic Study Committee of the Wisconsin Governor's Health Planning and Policy Task Force describes the "awful consequences" of chiropractic. The Chiropractic Study Committee recommended, among other things, that the state inform its citizens of the potential hazards, that the state prohibit the use of private resources to further the use of chiropractic, and that the task force oppose any legislation requiring coverage for chiropractic in any form of insurance policy. Delaware can do no less.

For too long, too little has been done to inform the health care consumer and the Legislature about this health hazard. Therefore, I call upon all who share the responsibility of maintaining quality health care for the people of our State to give the people the facts about chiropractic. Like all members of this scientific community, you will be doing only what you are obligated to do—protecting the public health.

Joseph A. Elliott

In Brief

Speakers on "Ask the Doctor"

Speakers for June on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: June 5, Charles A. Depfer, D.O., *What Is an Osteopath?*; June 12, Oscar N. Stern, M.D., *Cancer of the Uterus;* June 19, Robert E. Erb, M.D., *New Trends in Anesthesiology;* June 26, Howard Z. Borin, M.D., *The Child Foundation.*

In the News

Marjorie Jane McKusick, M.D. has been appointed to the Long Range Planning Committee of the American Academy of Pediatrics. This is a new committee of the Society consisting of seven members, two in private practice.

CLINICAL NOTICES AND MEETINGS

Leon Israel Memorial Lecture

The first S. Leon Israel Memorial Lecture will be held June 21, 1973 at 4 p.m. in Theater I of Pennsylvania Hospital's Preston Building, 8th and Spruce Streets, Philadelphia. The visiting professor, Samuel Jan Behrman, M.D., will speak on "The Enigma of the Trophoblast." The lecture is open to all professionals and is free of charge.

Summer Program in Human Sexuality

The Institute for Sex Research, Inc., of Indiana University announces its Summer Program in Human Sexuality, July 8-19, 1973. The Program will include a lecture course, forums on socio-sexual issues, sex counseling symposia, attitude-reassessment programs, and informal workshops. A registration fee of $325.00 includes housing. For more information write: Institute for Sex Research, Inc., 416 Morrison Hall, Indiana University, Bloomington, Indiana, 47401.

Public Health Postgraduate Programs

The Maternal and Child Health Program of the University of California School of Public Health at Berkeley announces its postgraduate programs for physicians. These programs all lead to the degree of Master of Public Health. Tax-exempt Fellowship support is available. Applications are now being accepted for September, 1974. Programs include: Maternal and Child Health, Family Planning, School Health and Adolescence, The Multiply Handicapped and Mentally Retarded Child, Comprehensive Health Care, and Perinatology. For information write: Helen M. Wallace, M.D., Professor and Chairman, Maternal and Child Health Program, School of Public Health, University of California, Berkeley, California, 94720.

Underwater Program

The National Association of Underwater Instructors presents a Diving Medicine for the Family Physician program, June 27, 1973 at the Institute for Environmental Medicine, University of Pennsylvania Medical Center, Philadelphia, Pa. The program begins at 8:30 a.m. and runs to 3:30 p.m. It was developed to acquaint physicians with what can happen to a diver, how it can happen, the necessary treatment and where such treatment is available. For more information write: Institute for Environmental Medicine, University of Pennsylvania Medical Center, 36 and Hamilton Walk, Philadelphia, Pa. 19174.

CLASSIFIED AD SECTION

Advertisements under the Classified Ad Section are charged at the rate of 30 words or less, set solid. One insertion $4.00. Call the Journal office, 658-7596 for further information or placement. All advertisements are payable in advance. The Editorial Board reserves the right to edit copy. Closing date for new copy is the first of the month for inclusion in the current issue.

Classified advertisements of a professional nature are free to members.

UROLOGIST: Licensed (FLEX) in New York state. Currently Chief Resident at St. Vincent Hospital, Erie, Pa. Available July, 1973.

HEMATOLOGIST: Board Certified. Interested in group or institutional practice in medium to large community. Graduate of Jefferson Medical College

(1967). Available July, 1973.

ANESTHESIOLOGIST: Graduate of Far Eastern University, College of Medicine, Manila, Philippines. Licensed in Pennsylvania. Holds permanent ECFMG certificate. Available July, 1973.

ANESTHESIOLOGIST: Currently a Fellow in Anesthesia at the Cleveland Clinic. Graduate of King Edward Medical College, Pakistan. Board Eligible. Licensed (FLEX) in Pennsylvania and Maine. Available June, 1973.

GENERAL SURGEON: Board Eligible. Licensed (FLEX) in New York. Graduate of Gujarat University of India Medical School. Has served internships and residencies in India in addition to an internship at Fordham Hospital in New York and residencies at the Brooklyn-Cumberland Medical Center in New York. Available July, 1973.

INTERNIST: Currently a Fellow in Pulmonary Disease, Allegheny General Hospital. Graduate of Nishtar Medical College, Pakistan. Passed FLEX (Ohio, 1973). Interested in associate or group practice. Available July, 1973.

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THE IMPOSTOR PATIENT:

MUNCHAUSEN'S SYNDROME

With Report of a Case

Herbert Heym, M.D.

With the universal availability of medical care and the increasing sophistication of the public's knowledge of disease, the problem of factitious illness is becoming more prevalent in hospital practice. "Pseudo-illness" may take many forms. The common malingerer who consciously feigns illness for primary gain, such as the "draft dodger," is a well-known problem. Similarly, the hysteric demonstrates the role of the subconscious in the attainment of secondary gain from illness (eg, the conversion reaction manifesting neurologic deficits). Between these two extremes, there is a spectrum of illness, including the hypochondriac, the neurotic with psychosomatic illness, and the so-called masquerading or hospital-addicted patient, often referred to as Munchausen's Syndrome.

Report of a Case:

H.K.M., a 45-year-old, burly white man, presented to the Emergency Room of the Wilmington Medical Center complaining dramatically of chest pain with pain and swelling of both legs. He stated that he was a TWA airline pilot with 24 years' experience, who had been driving home to York, Pennsylvania from New York, where he had attended a baseball game, when he just couldn't go further because of the pain in his legs. He related an episode of leg swelling and severe left chest pain that morning, and stated that he had had a similar experience three months before when he was attempting to land his airplane at Cleveland airport on a flight from Detroit. He vividly described how he experienced severe leg and chest pains and shortness of breath, requiring him to relinquish the controls to his copilot for the landing. He stated that he had been taken to Detroit Hospital where the diagnosis of pulmonary embolism and bilateral phlebitis was made and treatment begun with anticoagulants. His knowledge of what had happened seemed accurate and convincing, especially in describing his management. His main concern was that as a pilot he could not be kept on continual anticoagulants, and he expressed the hope that he would not have to remain long in the hospital.

*See editorial comment
on page 174.*

He further stated that he had previously been in good health all of his life and his only prior surgery was during World War II when as an Air Force pilot he had to eject from his burning plane and received shrapnel wounds,

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Dr. Heym is Chief Medical Resident, Wilmington Medical Center.

the exact details of which he couldn't recall. He denied any further medical or surgical admissions.

On physical examination his vital signs were all within normal limits, except for a low-grade temperature. He appeared a well-developed, serious-minded man, who complained of severe lower leg pains. His chest had some slight wheezes. His cardiac examination was unremarkable. The abdomen showed multiple surgical scars over the entire surface. His liver edge was palpable 3 cm below the right costal margin. The significant findings were mainly localized to his legs, which were markedly swollen with +4 edema and showed chronic stasis changes with discoloration and increased temperature. He appeared to manifest bilateral Homan's signs, with marked tenderness to palpation over both calf muscles.

While in the hospital, because of his convincing history confirmed by physical findings, a clinical diagnosis of pulmonary embolus from bilateral thrombophlebitis was made, and the patient was immediately started on heparin therapy by the intern in the Emergency Room. He was also given narcotics for pain, and his name placed on the serious list. Because his chest x-ray was reported within normal limits, a lung scan was requested, which showed small defects but no evidence of significant disease. His EKG was normal on two occasions. Because of problems monitoring anticoagulation using relatively high heparin doses with little effect on his clotting time, a hematologic consultation was requested to evaluate the possibility of a hypercoagulable state. No evidence of such could be documented. After three weeks of continual heparinization and narcotics for pain without significant changes in his symptoms, surgical consultation was requested regarding the possibility of a vena cava ligation for the prevention of possible further embolization. The surgeon agreed with the indication for operation and recommended an exploration of the inferior vena cava with plication. The patient was operated upon with some difficulty because of numerous adhesions, and in reaching the area of the vena cava, a hard object was felt. The initial feeling of the surgeon was that this may have been a piece of shrapnel, but on further dissection, it proved to be a previously placed clip on the vena cava.

Postoperatively the patient had an uneventful course. However, when narcotics were discontinued, he immediately became hostile, complaining that the nurses were not taking adequate care of him. And when questioned about previous surgery, he became evasive and would not admit to any other hospitalizations or surgery. He argued he was not receiving adequate treatment and wanted to sign out of the hospital against medical advice, despite his sutures not having been removed, to be treated by his personal physician in Baltimore. There was by now suspicion that much of his history was fallacious, and a search for other hospitalizations was begun.

A request to York Hospital revealed that this man had been admitted with the same problem there and had signed himself out against medical advice when he could not get sufficient analgesics.

In order to make the diagnosis of Munchausen's Syndrome, an attempt to document other hospitalizations is shown in Figure 1. Records of thirty hospitalizations prior to ours were obtained, but because of the patient's ability to fabricate his history, there are obvious gaps in the record.

In summary, his medical career began in 1928 when he had an appendectomy for an apparent "ruptured appendix." The story is not again picked up until 1948, when he began to have frequent bowel problems, presenting with "bleeding ulcers" and obscure bouts of abdominal pain. Although his records imply prior bowel and stomach resections, his second operation that could be documented was in 1953, and no gastroenterostomy was seen upon laparotomy.

By 1959 his target organ seems to have changed from bowel to cardiopulmonary with chest pain, dyspnea, and hemoptysis, symptoms which certainly require immediate hospitalization. There was even a time when he pleaded he had metastatic cancer and received cobalt treatments at Pittsburgh VA Hospital.

FIGURE I

RECORD OF HOSPITALIZATIONS

	Date of Admission-Date of Discharge	Hospital	Diagnosis and Comments
1.	1928	(Unknown)	Appendectomy (ruptured appendix)
2.	10-6-48 — 10-18-48	Mercy Hospital Altoona, Pa.	Traumatic contusion of bowel, incisional hernia
3.	12-19-49 — 12-31-49	Mercy Hospital Altoona, Pa.	Duodenal ulcer ("80% gastric subtotal resection and gastric jejugostomy"?)
4.	1-50	Altoona VA Hospital Altoona, Pa.	"Regional enteritis" "18 inch small bowel resection"?
5.	11-8-52	Altoona VA Hospital Altoona, Pa.	Intestinal obstruction?
6.	7-53	Coatesville Hospital Coatesville, Pa.	Abdominal pain, transferred to University of Pennsylvania
7.	8-7-53 — 9-17-53	University of Pennsylvania Graduate Hospital Philadelphia, Pa.	Partial intestinal obstruction (McBurney incision scar), exploratory laparotomy, lysis of adhesions (no gastroenterostomy), psychosomatic illness
8.	10-2-53 — 11-19-53	Mercy Hospital Altoona, Pa.	Intestinal adhesions, ileus
9.	10-11-58 — 10-19-58	Altoona Hospital Altoona, Pa.	Partial bowel obstruction (released against advice)
10.	12-21-58 — 1-2-59	Mercy Hospital Altoona, Pa.	Coronary artery thrombosis/anginal syndrome, thrombophlebitis, conversion neurosis
11.	4-10-62 — 5-2-62	Altoona Hospital Altoona, Pa.	Chronic venous insufficiency, anxiety
12.	12-2-62 — 12-10-62	Altoona Hospital Altoona, Pa.	Thrombophlebitis (left leg), chronic bronchitis
13.	4-2-64 — 5-24-64	Oakland VA Hospital Pittsburgh, Pa.	Fever of undetermined origin (released against advice)
14.	2-24-65 — 5-10-65	Wernersville State Hospital Wernersville, Pa.	Sociopathic personality — committed from jail and transferred to Lebanon County Prison
15.	3-3-67 — 4-21-67	Naval Hospital Philadelphia, Pa.	Thrombophlebitis (left leg) 3-4-67 attempted vena cava plication, found to be already plicated.
16.	6-20-67 — 6-26-67	York Hospital York, Pa.	Cellulitis (both legs), therapy for phlebitis (released against advice)
17.	8-15-67 — 10-27-67	Danville State Hospital Danville, Pa.	Committed to Alcoholic Rehabilitation Program
18.	2-23-68 — 3-14-68	Wilmington VA Hospital Wilmington, Delaware	Thrombophlebitis, personality pattern disturbance with pathological lying.
19.	3-14-68 — 4-2-68	Mercy Hospital Altoona, Pa.	Bilateral thrombophlebitis

20.	4-2-68 — 4-16-68	Altoona Hospital Altoona, Pa.	Phlegmasia cerulea dolens
21.	11-30-68 — 12-30-68	Williamsport Hospital Williamsport, Pa.	Iliofemoral thrombophlebitis, vena cava ligation with DeWeese Teflon clip 12-9-68
22.	1-5-69 — 1-7-69	Lock Haven Hospital Lock Haven, Pa.	Bilateral thrombophlebitis (released against medical advice)
23.	2-25-69 — 3-21-69	Sunbury Community Hospital Sunbury, Pa.	Phlebitis, bilateral venous ligation and stripping
24.	5-12-69 — 5-15-69	Uniontown Hospital Uniontown, Pa.	Acute bilateral thrombophlebitis, multiple pulmonary emboli (released against medical advice)
25.	5-16-69 — 6-11-69	Latrobe Area Hospital Latrobe, Pa.	Phlebitis and pulmonary embolism
26.	6-12-69 — 7-25-69	St. Francis Hospital New Castle, Pa.	Recurrent phlebitis and pulmonary emboli. Inferior vena cava plication 7-11-69
27.	8-15-69 — 8-20-69	Somerset Community Hospital Somerset, Pa.	Acute thrombophlebitis, bilateral
28.	8-21-69 — 8-22-69	Altoona Hospital Altoona, Pa.	Old stasis syndrome and chronic venous insufficiency, drug dependence, malingering simulating pulmonary embolism—released against medical advice (used alias Harry St. John)
29.	8-22-69 — 9-18-69	Altoona VA Hospital Altoona, Pa.	Chronic thrombophlebitis
30.	9-19-69 — 9-22-69	Philipsburg State General Hospital Philipsburg, Pa.	Thrombophlebitis
31.	9-23-69 — 10-1-69	Clearfield Hospital Clearfield, Pa.	Chronic thrombophlebitis, pulmonary infarction
32.	10-7-69 — 10-27-69	Wilmington Medical Center Wilmington, Delaware	Munchausen's Syndrome—chronic venous stasis syndrome simulating acute phlebitis and pulmonary embolism, laparotomy for vena cava plication. Clip already on vena cava (released against medical advice)
33.	7-2-70 — 7-2-70	Somerset Community Hospital Somerset, Pa.	Trauma to leg by shovel (released by hospital when history of malingering discovered)

Upon their further investigation he was found to have multiple psychiatric hospital admissions, and a police record of 33 arrests and convictions for forgery, alcoholism, and other misdemeanors. Psychiatric evaluation described a personality disorder characterized by the need to manipulate situations and to seek a safe, protective environment as in a hospital.

Because he used aliases ("Harry St. John," "Harry Kerdell"), falsified his address, changed his alleged occupation, and gave a spurious medical history, his masquerade was rarely revealed, and when his doctors became suspicious he immediately left against medical advice, saying that he was not receiving adequate medical care or merely disappeared. It is amusing that when asked about his hospitalization insurance, he often said "Travelers." The VA hospital system became cognizant of this man's abuse of their organization in 1968 when the Wilmington VA Hospital reviewed his previous hospitalizations and declared him ineligible for further VA benefits.

It is interesting from the medical-surgical viewpoint how frequently the staff was fooled into believing that this man's chronic problem was actually an acute illness requiring aggressive therapy to the point of vena cava plication. I estimate that this man has had at least five attempts at this operation. Twice the finding was that the operation had already been performed. Certainly the ability of this man to deceive and convince those in charge of his care must be grudgingly admired. He carefully made his rounds of small community hospitals and was recognized only when he overused one hospital.

A simple way to avoid recurrence of this situation has not been discovered, and "Harry St. John" is probably continuing his travels to other hospitals at the present time despite attempts to notify the state hospital associations which publish periodic warning bulletins. By this means we received a follow-up report from Somerset Hospital where he attempted to gain admission after leaving us, so we must assume that he is continuing his hospital wanderings unless he himself has become a victim of his own unnecessary attempts to risk operative mortality.

Discussion

Munchausen's Syndrome was introduced to the medical literature in 1951 by the prolific British physician-author, Richard Asher, who coined the eponym from the so-called historical character described in Raspe's *Singular Travels, Campaigns and Adventures of Baron Munchausen.* The patient described by Asher was characteristically well-traveled and "admitted to the hospital with apparent acute illness supported by a plausible and dramatic history. Usually his story is largely made up of falsehoods; he is found to have attended, and deceived an astonishing number of other hospitals; and he nearly always discharged himself against advice, after quarrelling violently with both doctors and nurses. A large number of abdominal scars is particularly characteristic of this condition."[1]

Since Asher's original description, awareness of this type of patient has produced at least 60 well-documented cases,[2,3] with some becoming so infamous as to receive eponyms of their own (eg, "Indiana Cyclone," "The Baron"). They have been described as "chronic factitious illness," "hospital addiction syndrome," "peregrinating problem patients,"[4] and "hospital hobos." Although only the most exaggerated cases may have been reported, it was Asher's contention that this syndrome was common but unrecognized. Certainly when most physicians are asked their own experience, many recall having heard or seen of such a case but because they had to assume disease to be present at that time, a suspicion of feigned illness could only be made in retrospect.

The features which have classically been associated with this syndrome are the dramatic exhibition of symptoms along with an elaborately fabricated medical history which thoroughly convinces all attending of its authenticity. These patients willingly submit to surgical procedures at many different institutions, but when their hoax is suspected, they become hostile and belligerent, complaining about the care they are receiving and finally requesting release from the hospital.

No simple motivation has been discovered for this bizarre way of life. Suggestions of narcotic addiction, escaping prosecution, free lodging, or antagonism to doctors and hospitals all seem too superficial an explanation. Psychiatric evaluation has attempted to explain the possible psychodynamics of this strange behavioral pattern which appears to be a distinct entity with unique psychopathology.[5–7] Some have labeled these people as impostors who assume a fake identity as a defense mechanism against the anxiety associated with feeling inferior. By assuming another role, the imposter is able to disassociate himself from the fears connected with his own personality. He becomes masochistic without the usual sense of anxiety because he is protected by his false identity.

Whereas the usual impostor assumes the role of affluence or power (ie, the physician), the Munchausen becomes the object; rather than impersonating the doctor, he becomes the patient. Although this appears to be an apparent reversal of the desired objective, the same result may actually be accomplished since by fooling the doctors he has become their master. Then, when his impersonation is finally revealed and the drama concluded, the anxiety released is directed against the doctor.

The reason why medicine becomes the stage for releasing these conflicts appears to be associated with a prior close relationship with physicians, who represent the authority figure but with a protective influence. The hospital personifies this by the establishment of a dependence state where the doctor plays the maternal role. Therefore, to achieve this goal, the Munchausen must attempt to gain hospital admission by prevarication. Repeatedly successful results then tend to reinforce this practice, making successful treatment to change this behavioral pattern very difficult. The only semi-successful approach to date has been case reporting and general awareness by the medical community so that medical resources are not wasted; this is more of a benefit to the hospitals and doctors than a "cure" for the patient.

A firm diagnosis of Munchausen's Syndrome is usually made retrospectively, from suspicion based on correspondence with other physicians and institutions. While it is important to recognize patients with Munchausen's Syndrome for what they are, it is also important not to withhold narcotics from patients actually in pain and surgery from patients actually in need of it. The clever Munchausens such as the patient reported in this paper have added their bit to the dilemma and difficulties of clinical medicine, but reemphasize the importance of accurate diagnosis preceding necessary treatment.

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IMPORTANT DRUG NEWS

On May 29, 1973, the Governor of Delaware signed a bill placing methaqualone in Schedule II under Section 4716 of the State Uniform Controlled Substances Act. Registrants must inventory their supplies of methaqualone products. This inventory must be kept on the premises for two years. Oral prescriptions for these medications are illegal. Prescriptions must be written as outlined in Section 4738 of the State Act. No prescription for a Schedule II substance may be refilled. Methaqualone must be secured according to the requirements of Section 6 for the State Regulations. Record-keeping requirements for other Schedule II substances must also be followed.

Since the Federal Government has not placed methaqualone in Schedule II at this time, it cannot be ordered on the Federal Schedule II order forms. Distributors will be notified to accept orders in the normal fashion from qualified registrants. It appears that the Federal Government will shortly place methaqualone in Schedule II. Questions concerning the new legislation should be addressed to Martin Golden, Pharmaceutical Control Officer, Division of Public Health, Dover.

MOLLUSKS DANGEROUS TO SCUBA DIVERS

Mollusks can be an unexpected hazard to scuba divers. Octopuses and cone shells can inflict fatal bites, tropical pond snails can transmit fatal parasitic diseases, and certain shellfish can cause paralytic poisoning.

R. TUCKER ABBOTT, Ph.D.

Our friendly mollusks, those placid oysters on the half-shell, those innocent-looking snails of garden paths and coral reefs, are responsible for the deaths of over 100,000 people throughout the world every year. Mollusks affect man in a dozen curious ways, from the fatal bite of an octopus and the venomous sting of a cone snail to afflictions by snail-borne human parasites and infections from clams carrying infectious hepatitis and oysters bearing typhoid. Paralytic shellfish poisoning has felled nearly a thousand persons.

Although it is probable that no more than one or two scuba divers die each year from molluscan causes, it might be well to set forth the potential dangers from such unexpected sources as pretty seashells, edible sea mussels, tiny freshwater snails, and giant clams. The mollusks dangerous to scuba and skin divers fall into two great habitats — the oceans and the freshwater lakes and rivers.

Most potent of the venomous mollusks are the cone snails, a group of attractive tropical seashells of worldwide distribution, which are avidly sought by shell-collecting divers. To date, over 30 cases of human injury from cone snail stings have been recorded in the medical literature. Ten of these resulted in the death of the victim. All fatal cases have occurred in the southwest Pacific. Two non-fatal stings have been reported from the Western Atlantic, the most recent being in St. Petersburg, Florida, in 1970, when a collector was stung by the common Alphabet Cone, *Conus spurius.*

Fifteen species of tropical Indo-Pacific species of Conus have stung humans. Most notorious is the Geography Cone, *Conus geographus* Linné, which has been responsible for nine human deaths, the most recent occurring on Guam Island, Marianas, in July, 1969. (Figure 1) *Conus textile* Linné has seriously stung at least five people, resulting in death in one instance. Among the other well-known venomous species are *Conus omaria,* (Figure 2) *imperialis, tulipa, obscurus, litteratus, marmoreus, aulicus,* and *pulicarius.*

There are two classes of cone stings. One produces a mild sting resembling that of a wasp or bee. The cones inflicting a mild sting include species that normally feed on marine worms. Severe stings sometimes resulting in death are inflicted by fish- and mollusk-eating cones. The severe symptoms are generally similar in most cases. Usually the victims have been stung in the hand while holding a recently-collected live cone shell, but there have been two abdominal and one back stings, the latter due to the shell being in a bag of loose

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R. Tucker Abbott, Ph.D., is Curator, Delaware Museum of Natural History.

cloth dangling next to the body. After the initial sharp and painful sting, numbness and paralysis of the limb occur, which finally spread to all parts of the body. There are usually speech difficulty and difficulty in swallowing.

Dr. H. Flecker (1936) reported a 27-year-old, white male in Queensland, Australia, who was stung by a Geography Cone. His initial symptoms were slight numbness spreading to the lips, then failing eyesight, double vision, drowsiness, paralysis of legs, coma after 60 minutes, and death within five hours. Dr. L. C. D. Hermitte (1946) recorded a Geography Cone sting in a 32-year-old male in the Seychelles Islands in the Indian Ocean. The symptoms were similar, but additionally there were nausea and difficulty of speech. Pulse and respiration were normal, and the patient recovered. In a similar case in Fiji in 1901, a woman recovered after 24 hours. A. J. Kohn (1958) reported the stinging by a Textile Cone of an adult Hawaiian male. There was immediate shortness of breath, severe headaches, extreme nausea, and stomach cramps, but except for local pain the patient recovered in 24 hours.

The poison bulb and gland and the minute harpoonlike radular teeth are located in the pharynx of the cone shell. An extensible, red proboscis carries a single tooth at the distal end and thrusts the barb into the victim; this is followed by an injection of venom through the hollow tooth into the flesh of the victim. (The term "bite" would be as applicable as "sting".) The natural prey, whether small fish or worm, is pulled back into the expanded proboscis of the snail. The exact nature of the venom is not known. Pharmacologically it causes muscle paralysis but does not appear to block transmission at the neuromuscular junctions.

Of equal virulence are the bites of octopuses. Fifteen cases are known, but only one fatality has occurred. The latter, in 1954, resulted from a bite from the polka-dotted Australian octopus, *Hapalochlaena lunulata.* Characteristically, there was no pain felt from the initial bite of this species. The bitten victim, an adult Australian man, had a dry feeling in his mouth, difficulty in swallowing, a trickling of blood from the small puncture wound, vomiting, rapid loss of coordination, failure of the limbs, semiconsciousness, cessation of breathing, and cyanosis. Death occurred within two hours of being bitten.

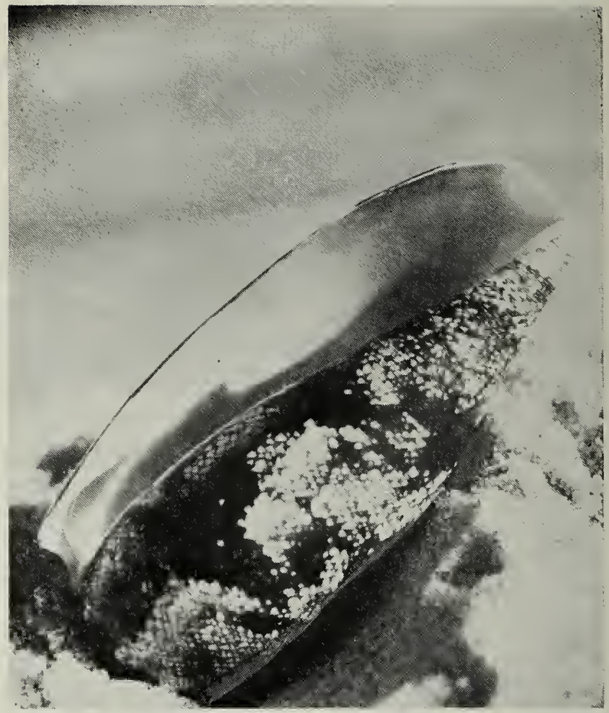

Figure 1

Geography Cone, **Conus geographus** Linné, has stung and killed several people.

Other *Octopus*, including species from Florida, Hawaii, and California, cause a very painful bite, followed by considerable redness, swelling, itching, and aching for periods of several days to several weeks. Bleeding sometimes occurs. There are usually two small punctures in the skin, produced by the pointed, sharp, parrotlike beaks of the octopus. The cephalotoxin is produced by two, large, posterior salivary glands. There are no anti-venoms developed for cone or octopus bites.

Although some other families of marine mollusks, such as Terebridae and Turridae, have a stinging apparatus, they are believed to be relatively harmless to humans.

Occasionally there may be minor mechanical damage done to divers by spiny shells, or

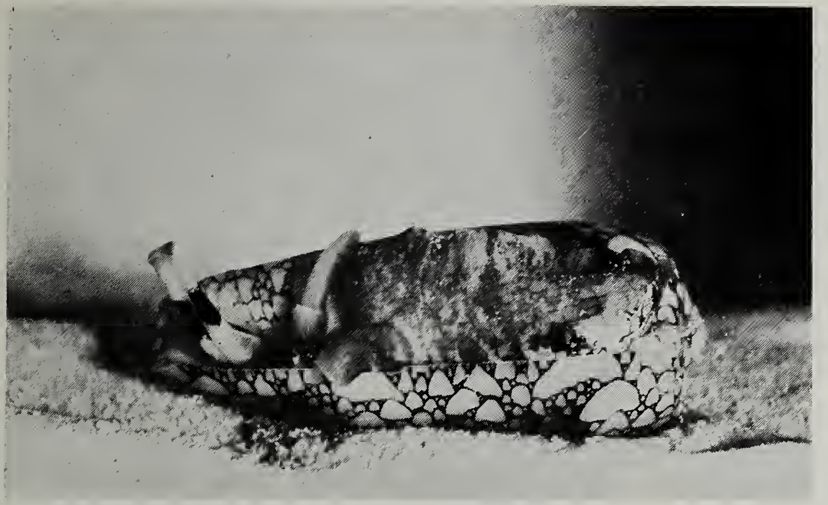

Figure 2
The venomous cone, **Conus omaria** Hwass, extends its siphon (left) and dangerous proboscis.

when rock oysters and small *Tridacna* clams suddenly clamp down on exposed fingers. At worst, the diver could lose the skin from his fingers. There have been no authenticated cases of a Giant *Tridacna* Clam entrapping and causing a diver to drown, although the possibility is not unlikely.

Since many divers collect and eat various types of shellfish, we will review the paralytic shellfish poisoning that sometimes occurs from eating raw or cooked clams and blue mussels on either of our coasts. Fortunately, the infected areas are limited, the seasons short, and deaths not many. The bivalves become poisonous because they ingest the microscopic marine algae, *Gonyaulax*. The single-celled Gonyaulax is a dino-flagellate that "blooms" in great quantities when the temperature of the water exceeds 10°C. The caustive agent on the Pacific coast is *G. acatenella;* on the Atlantic coast it is *G. tamarensis.* Within historic medical times there have been 957 cases and 222 deaths from bivalve paralytic poisonings around the world. This does not include cases of severe allergy reactions to eating shellfish. Mussel poisonings, including deaths, have been recorded from Scotland, Wales, Belgium, Ireland, France, Australia, New Zealand, South Africa, and Japan.

On the Atlantic coast there have been about 100 poisonings and three deaths. The areas affected were the Bay of Fundy and the Gaspé Peninsula in Quebec. Bivalves carrying the poison are the mussels, *Mytilus edulis* (Figure 3) and *Modiolus modiolus*, the soft-shell clam, *Mya*, the surf clam, *Spisula solidissima*, and the razor clam, *Ensis.* Poisonings have occurred between June 4 and October 11, with the peaks being in August and September. Ordinary cooking reduces but by no means eliminates the poison. There is a wide range in human susceptibility; some people, especially those not normally eating shellfish, are very sensitive. Cats and chickens die very quickly when fed infected clams or even the "rims" or trimmings of scallops. The muscles of scallops are not infected and are therefore safe to eat.

Within five mintues of chewing an infected bivalve, the victim begins to feel a stinging, tingling, and numbness of the lips, tongue, and throat. Within 15 to 20 minutes, in the case of severe poisonings when five to 20 bivalves have been eaten, there is a numbness of the fingers and toes which may spread to the knees, then hips. The face, arms, and neck may become paralyzed. Death ensues when the paralysis affects the respiratory muscles. The duration of the effects usually ranges from 8 to 48 hours, depending upon the dose and the patient's reactions.

The Pacific coast has had more trouble than the Atlantic. The earliest recorded cases occurred on June 15, 1793, when one death and four illnesses occurred among Captain George Vancouver's men in British Columbia from the eating of toxic mussels. According to historians, the Russian Baranoff expedition lost 100 men near Sitka, Alaska, in 1799 from eating mussels. The Pacific infections are recorded from eleven species of edible bivalves including the venerid clams and *Mytilus* mussels. The most dangerous months in the Northwest are from May to October, with recorded deaths occurring in May and June. In British Columbia, the butter clam, *Saxidomus,* has the worst record, having killed several and made violently ill many dozens of people. The toxicity contained in clams is absorbed by moon snails when they feed upon infected individuals.

The menace from freshwater mollusks is much more serious than the relatively few dangers from marine species. Over 100,000 deaths occur a year from parasitic trematode diseases carried and spread by snails. Three forms of the blood fluke disease, Schistosomiasis, account for most of these deaths. Divers can readily become infected by merely swimming or wading in fresh water in Africa, Asia, or the tropical New World. *Schistosoma mansoni* and the snail that carries it are present in Puerto Rico, Vieques, St. Kitts, Antigua, Guadeloupe, Martinique, Venezuela, French Guiana, and large areas of Brazil. Unless treated, infected swimmers are apt to die within one or two years.

The life cycle begins with the eggs of the worm leaving the human host with the feces. If the feces are washed into fresh water, the eggs hatch and release a microscopic, ciliated, free-swimming larva known as a miracidium. The latter must enter the flesh of a specific species of snail within a few hours, in order to survive. Once inside the snail, it develops through a series of sporocysts into fork-tailed larvae, called cercariae. The latter take about three months to develop and may continue to be produced for several years. The cercariae break out from the snail, swim actively in water, and penetrate the human skin. The young worms enter the blood stream, travel to the heart, are pumped to the lungs, and then migrate to the branches of the hepatic portal vein in the liver. After the worms become adult, they pair and migrate to the mesenteric venules of the portal system, where the females deposit large quantities of eggs. Some of the eggs escape through into the intestines and are carried out of the body in the feces, thus completing the life cycle.

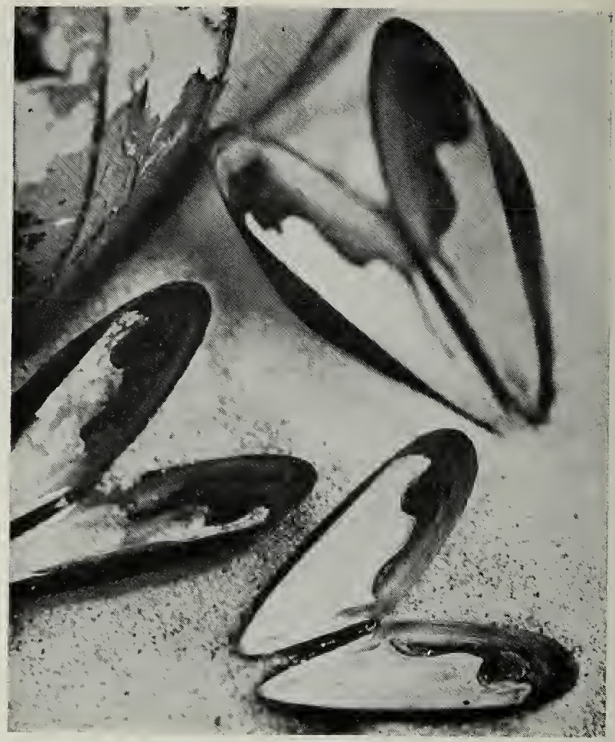

Figure 1

Although the blue mussel, **Mytilus edulis** Linné, is farmed and extensively eaten in Europe, in eastern Canada it is dangerous to eat at certain seasons.

Divers should always ascertain the extent of schistosomiasis in foreign areas where they plan to dive in fresh water. Wet suits prevent infection. The disease has not been caught by anyone swimming in waters of continental United States, Canada, or Mexico. There are about 100,000 infected Puerto Ricans in New York City at the present time, and in April, 1972, fifteen cases were discovered among Arab farm workers in San Joaquin Valley, California. Fortunately there are no native US snails that naturally carry schistosomiasis, but the introduction of foreign carriers is a constant threat.

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HEADACHE MECHANISMS*

PART II

Helen Goodell, B.S.

The Role of Blood Vessels in Headache

Let us go back to 1933 and trace some of the beginnings of Dr. Wolff's thinking about headache mechanisms. Forbes, Wolff, and Cobb in 1929 had demonstrated in cats an increased amplitude in intracranial pulsations after injections of histamine and concluded that this actually represented an increase in stretch of dilated intracranial vessels with each cardiac systole.[1] In 1933 Pickering and Hess reported on their use of histamine in production of experimental headache.[1] Therefore, with Dean Clark and Heloise Hough we proceeded to ascertain the role of the blood vessels by inducing experimental headache with intravenous injections of histamine in human subjects.[1,12]

A needle in the subarachnoid and a tambour over the temporal artery were connected through an air system to a capsule with one elastic wall. Mirrors attached to the latter reflected beams of light into a camera onto a moving strip of bromide paper. It was a far cry from the modern transducers for recording pulsations, but in that old-fashioned, ingenious way both intracranial and temporal artery pulsations could be recorded quite satisfactorily. After injection of histamine, with generalized vasodilatation there was an initial drop in blood pressure and headache began as the blood pressure returned toward its previous level. Although this rising blood pressure reflects vasoconstriction in at least a portion of the total vascular bed, the larger *cerebral* blood vessels remain dilated and hypotonic and with rising systemic blood pressure are still further dilated and bear the brunt of the painful thrusts of each cardiac systole. The amplitude of intracranial pulsations may be doubled during this headache, which lasts only a few minutes.

An astute clinical observation that both *intra* and *extra* cranial arteries participate in the migraine attack came from Dr. Henry Dunning, the late Clinical Professor of Neurology at Cornell University Medical Center, early in the 1930's. He observed a patient having a right-sided scintillating homonymous hemianopsia which lasted about 30 minutes. As the scintillations cleared, he noticed a throbbing *left frontal* supraorbital headache. Since the patient had never noticed the throbbing in the throat before, Dr. Dunning told Dr. Wolff about the case. Dr. Wolff promptly exclaimed: "This is a very significant observation! The migraine attack must begin with the intracranial vasoconstriction, to be followed by the painful extracranial vasodilatation." This has recently been convincingly redemonstrated by workers in Denmark.

In the 1940's Kunkle observed that a slight jolt of the head would accentuate the pain of experimental histamine headache, and he used an ingenious gadget which could measure the force in G's of the jolt which caused pain — it is about the size of a match box, and when held between the teeth, a jolt of the head records its force in G's on a smoked glass.[1]

Miss Goodell is with the Department of Neurology and the Westchester Division, Cornell University Medical College and the New York Hospital.

This paper was presented at the Tuesday Morning Medical Conference, Wilmington Medical Center.

* Adapted from Thirty Years of Headache Research in the Laboratory of the late Dr. Harold G. Wolff, as published in *Headache* 6:4, January, 1967.

Part I of this paper appeared in the May, 1973 issue of the *Delaware Medical Journal*

Likewise, the pain of occasional migraine headaches is excruciatingly increased by even the slightest jolt — evidence again that intracranial vessels are also involved in some headaches.

The Effect of Raising the Intracranial Pressure

George Schumacher, the Professor of Neurology at the University of Vermont College of Medicine, showed in patients having diagnostic lumbar punctures that experimentally induced histamine headache could be temporarily and completely abolished by raising intracranial pressure with sterile saline via the subarachnoid space, thus compressing the painful dilatations of intracranial vessels.[1,17] "What then," said Dr. Wolff, "would be the effect on the pain of migraine of raising the intracranial pressure?" So, intracranial pressure was similarly raised during migraine attacks with failure to diminish the intensity of the pain in most patients studied. The fact that increased intracranial pressure abolishes experimentally induced histamine headache and has so little effect on most migraine headaches is evidence that the former emanates mainly from intracranial vessels, at least in many subjects and in the majority of headaches.

However, the 10% of migraine patients whose attacks are ushered in with scotomata present evidence that the intracranial vasculature *is* involved just as Dr. Dunning's observation had indicated. It was about 1940 that the medical student Alvin Cahan came into the laboratory with rather spectacular pre-headache scotomata.[1] We got in touch with Dr. Wolff, who was playing his daily squash game with Stewart Wolf, who is Professor of Medicine and Director of the Marine Biomedical Institute, the University of Texas Medical Branch at Galveston. So off we sent young

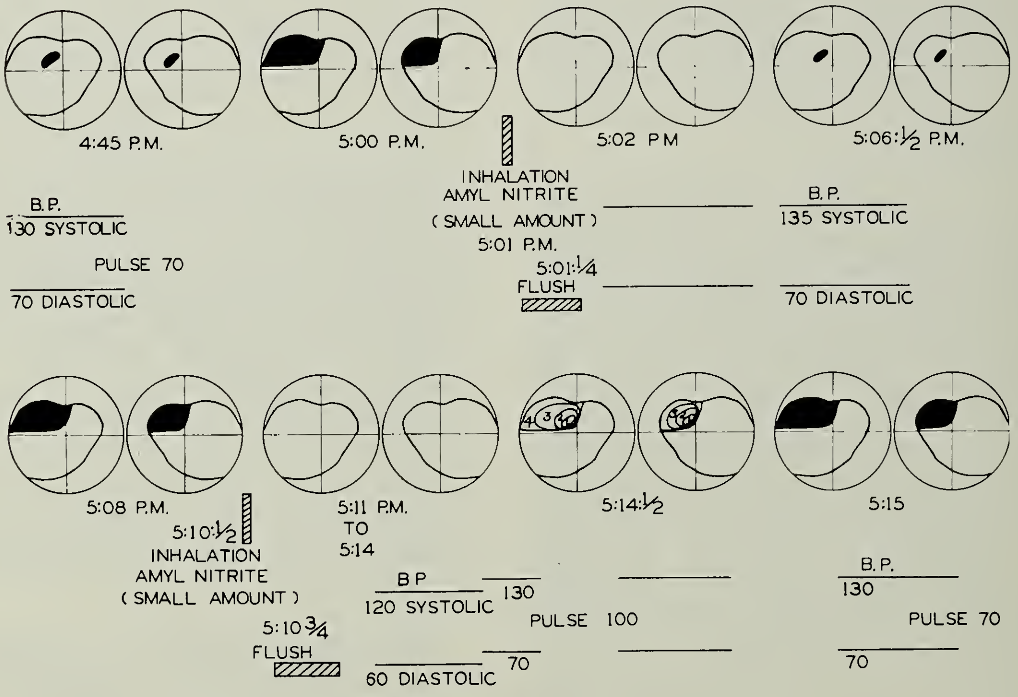

Figure 4

Effect of inhaling a small amount of amyl nitrite on pre-headache scotomas in a subject with migraine. The amount was insufficient to cause a drop in blood pressure, or "light-headedness."

Cahan to the squash court on the 27th floor with an ampule of amyl nitrite, a stopwatch, and a blood pressure apparatus. Dr. Wolff had him whiff a small amount of amyl nitrite, just enough to dilate cerebral vessels with no change in blood pressure, and the scotomas disappeared — to return shortly thereafter. (Figure 4) It was apparent to Dr. Schumacher and Dr. Wolff from these experiments that *cranial vasoconstriction was responsible for the prodromal visual defect in migraine.*[1]

Further supporting evidence was the effectiveness of inhalation of the intracranial vasodilator, carbon dioxide, in abolishing these preheadache, vascoconstrictor phenomena of the migraine attack.

Some 13 years later, in 1953, Tunis was able to anticipate a headache attack in a patient.[1] He inserted an ergotamine tartrate suppository whose vasoconstrictor action prolonged the scotomata phase of the attack for over three hours. Ostfeld induced scotomas in a patient subject to migraine by cautious infusion of the vasoconstrictor nor-epinephrine.

Intracranial vascular involvement in migraine was pointed up by Dunning in 1942 in his report of intracranial and extracranial vascular accidents in migraine, and more recently by the Camp and Wolff study of electroencephalographic abnormalities that occur in patients with vascular headaches of the migraine type, including the ophthalmoplegic migraines.[1]

"Never a day without an experiment" was the motto writ large upon our bulletin board. So, hot upon the 1933 experiments using histamine to induce headache came the early clinical trials by John Graham of ergotamine tartrate in aborting the migraine headache attack.[1,18] The same old apparatus as previously described now recorded at the height of the migraine headache large pulsations of the temporal artery whose amplitude was reduced by 40 to 60% within minutes after the intravenous administration of ergotamine tartrate, in close relation to the decline of the intensity of the headache. (Figure 5)

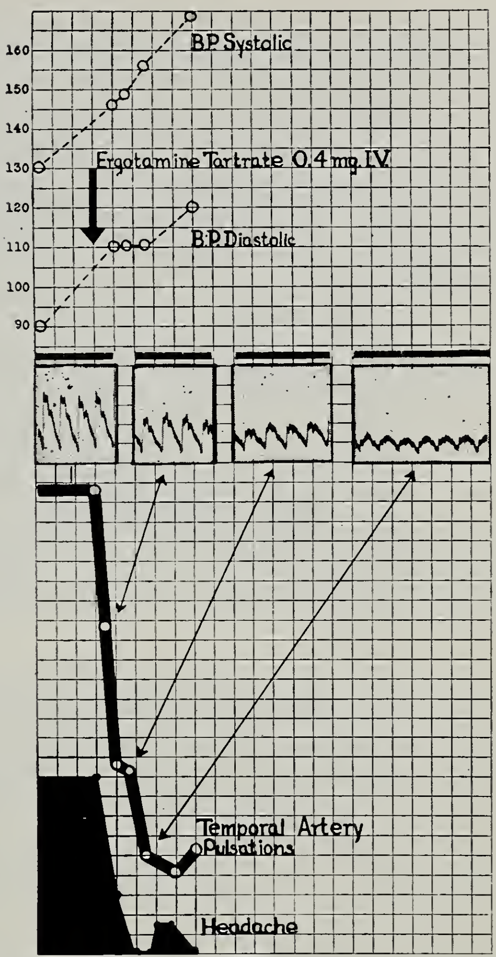

Figure 5

Relation of the amplitude of pulsations of the temporal artery to the intensity of headache after administration of ergotamine tartrate. The sharp decrease in the amplitude of pulsations following injection of ergotamine closely paralleled the rapid decrease in intensity of the headache. Representative sections of the photographic record are inserted.

No convincing correlation was established between the amplitude of the cerebrospinal fluid pulsations and the state of the headache, although photographs by Milton L. Berliner, formerly with the Department of Ophthalmology at Cornell University Medical College, of the retinal vessels before and after administration of ergotamine did reveal some vasoconstriction of these branches of the internal carotid arteries.

Then came the spring in the year 1947. The circus came to town. Dr. Wolff had as a patient a flying trapeze artist who had frequent migraine headaches and told him her pain was often relieved when she had to stand on her head. She gave him tickets for the Big Show. Dr. Wolff went and came to work the next day asking "What happens when a person stands on his head?" He sent Marcussen to see the professional circus headstanders, and back to the laboratory he came where he and Kunkle had all of us standing on our heads.[1] We had a sturdy tilt table for the purpose. (Figure 6) Prompt and vigorous vasoconstriction took place at the head end of the body, which diminished and occasionally terminated headaches. Here we have a fine example of neurogenic factors operating to end an attack

On the other side of the coin Kunkle followed the suggestion made by Erasmus Darwin in 1796 and twirled headache sufferers on a human centrifuge, temporarily obliterating their vascular headaches.[1] (Figure 7)

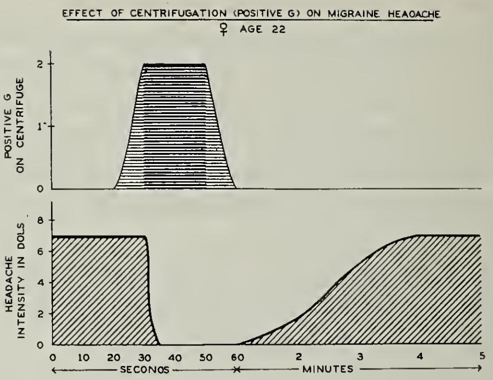

Figure 7

Effect of centrifugation (positive 'g') in reducing the intensity of a migraine headache in a young woman, age 22.

Both Kunkle and Schumacher studied intracranial pressure and headache, and Schumacher and Guthrie demonstrated in paraplegics that sudden rise in blood pressure gave rise to headache.[1,17] But that hypertension *per se* gives rise to headaches was firmly negated by observation of many patients and most particularly by hour-to-hour, day-to-day recording of blood pressure levels and occurrence of headache in our good friend and patient, Mr. S. Cohen, who was proud of his contribution to science with his many headaches, his participation in experiments, and his meticulously kept diary. May I add here that many headache patients have been eager to help, and indeed without them much of this work could not have been done. Mr. Cohen's headaches occurred with low, medium, and high levels of blood pressure, and ergotamine tartrate obliterated his headaches although his blood pressure rose to astronomical levels. (Figure 8)

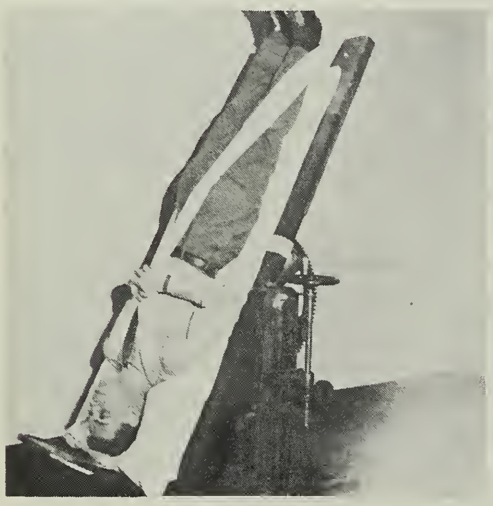

Figure 6

Tilt table for laboratory observations of "head-standing."

In the middle years of the 1930's our studies on pain and pain sensitive structures of the head had begun and were to continue from one problem to another through the years up to the very week before Dr. Wolff's death in February 1962. Experiments were done together with Hardy,[19] Stewart Wolf, Ray, Kunkle, Simons,[1,6] Day,[1,5] McAuliffe,[20] Eckhardt,[20] McLean,[20] Behrman,[21] Robertson,[21] Holmes,[22] Tunis, Ostfeld,[1,14,15] and Dalessio.[1,14,15]

Measuring Pain Thresholds

With Hardy the skin pain threshold, the effects of analgesics, and the dol scale of pain intensity were defined, and most important for the study of headache a means was devised for measuring deep pain thresholds by

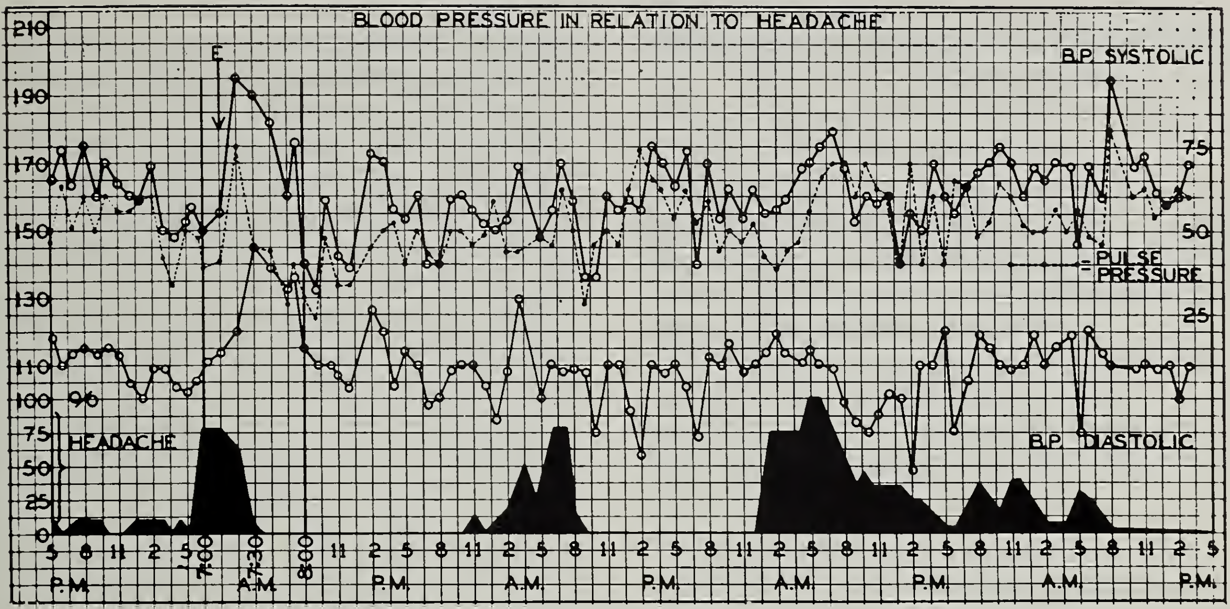

Figure 8

Relation of blood pressure to headache in a patient with hypertension and associated headache. The fluctuations of the blood pressure, and the incidence and severity of the headache vary independently. Thus, headache occurred with a blood pressure of 140 systolic and 75 diastolic on one occasion, whereas headache disappeared as the blood pressure rose from 145 systolic and 90 diastolic to 195 systolic and 110 diastolic at another time. At 'E' (upper left of the chart) is shown the record of a headache terminater by ergotamine tartrate.

pressing on tender tissues with a gadget having a lucite tip on the end of a rod in a spring.[1,19] As the spring was compressed, force could be read from a scale. Pain thresholds, ie, the amount of such force just elicting pain, were found remarkably lowered in the extracranial tissues of the head during the headache attack, and especially so in the near vicinity of painfully throbbing dilated branches of the temporal or occipital arteries.

Both Dr. Wolff and I and the succession of brilliant young men with whom we worked year after year served repeatedly as our own experimental subjects for pain and headache studies. You have to have a human subject for the study of pain. True enough we never had our heads opened by Bronson Ray, but pain sensitivity and pain reference from every accessible cranial cavity and structure were investigated.[1,4] However, Dr. Schumacher reminds me that Dr. Wolff actually did have his head opened by Bronson Ray on the day that he cut down on his temporal artery, pulled on it, dilated it with saline, and injected histamine directly into it, in order to study the pain so induced.

In the 1950's Dr. Wolff's creative preoccupations were more productive than ever. Laboratory activities were focused on the nervous system and disease, and particularly on the neurogenic concept of vascular headache. Data were accumulated from a long series of experiments indicating that during migraine headache there is elaborated locally in extracranial tissues through neuronal activity a tissue-damaging and pain threshold-lowering agent. Subjects sat in a bathtub of hot water with consequent temporal artery dilatation but no headache and no lowering of deep pain thresholds. Then we withdrew a small amount of tissue juice from an aching head and injected this into tissues adjacent to the dilated artery of the bathtub sitter. Then this head ached too. Therefore, both cranial artery vasodilatation and the presence locally of a pain threshold-lowering agent are necessary concomitants to induce headache.

Neurokinin

Such observations led to the hypothesis that in addition to vasodilatation, a local sterile inflammation occurs in headache and that a substance that lowers pain threshold, increases capillary permeability, and heightens vulnerability to injury, accumulates in the walls of the arteries and in the adjacent tissues as well.[23] We called the substance neurokinin.[23,24] It is a powerful dilator of blood vessels.

Means were devised to support this hypothesis. Sterile isotonic saline was injected subcutaneously into these tender tissues at the site of headache and as much fluid as possible withdrawn under gentle negative pressure during a two-minute interval. These specimens contained an active substance that relaxed the isolated rat duodenum, contracted rat uterus, and depressed the blood pressure of the rat. Analysis of many specimens of tissue fluid gave a constant ratio of activity, thus indicating that it was due to a single substance, resembling bradykinin or plasma kinin but apparently not identical with either. As shown by several assay procedures it is a polypeptide of the same general type. Neurokinin is released into tissue fluid of the skin of man during antidromic dorsal root stimulation and during reflex flare. It is *not* the result of vasodilatation alone, since it is not released during reactive hyperemia. It is in itself a powerful dilator. We found the neurokinin content of tissue fluid collected during headache to average eight times, and in some instances thirty-five times, as much as in control specimens from non-headache subjects, and the amount was closely related to intensity of headache. (Figure 9)

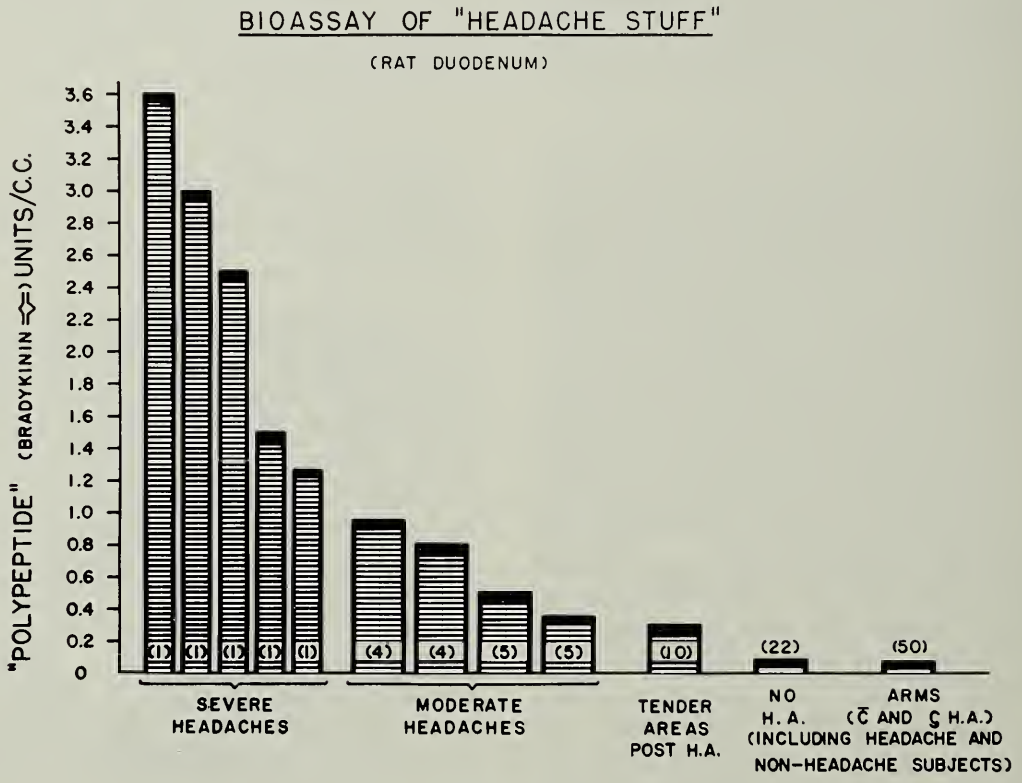

Figure 9

Results of bioassay of subcutaneous perfusates grouped according to the intensity of pain.

The Effectiveness of Methysergide

The possibility of shedding further light on the pathophysiology of vascular headache was suggested by the effectiveness of methysergide (*Sansert*$^{(R)}$-Sandoz) in reducing the number and severity of headache attacks when the agent is administered daily to maintain an adequate blood level. It was supplied to us by Sandoz Pharmaceuticals. First we induced sterile inflammatory reactions with 1% manganese butyrate intradermally, measured the size of the inflammation, then gave the subject methysergide for several days. Inflammatory reactions were again induced and found to be considerably smaller in size.[14] Second, Zileli observed that the peak pressor response following immersion of the hand in ice water was gradually reduced in a series of nine subjects with vascular headache, who were significantly benefited by daily oral administration of methysergide.[1] Third, in several subjects after overhydration we induced oliguria by the antidiuretic action of smoking two cigarettes. The conjunctival blood vessels became dilated and resistant to the vasoconstrictor action or nor-epinephrine. This state was frequently accompanied by headache. Then during the spontaneous diuresis which followed oliguria the dilated conjunctival vessels became slightly constricted and their response to nor-epinephrine returned to the preoliguric status. With Dalessio and the two medical students who participated in these experiments, we found that the prior administration of methysergide for a period of days reduced the magnitude of these vascular responses, especially during the oliguria, and no headache occurred.[1,14,15] These data suggest that in the prophylaxis of vascular headache of the migraine type the peripheral actions of this therapeutic agent, methysergide, on cranial blood vessels are supplemented by its effects on the nervous system. The magnitude of cranial vascular responsivity is reduced, thereby preventing crises of vasoconstriction and vasodilatation that characterize the migraine attack. The inference is therefore supported that unstable cranial vasomotor functions are a prime factor in the pathophysiology of this variety of headache. For those who will use methysergide for the control of headache in their migraine patients, one must sound a note of warning as to its side effects, and I refer you to the papers of John Graham of the Headache Clinic at Boston's Faulkner Hospital on this subject.

At the time of his death Dr. Wolff was still exploring the biologic significance of vascular headache of the migraine type. He had shown the biphasic vascular reaction, vasoconstriction and vasodilatation, and he had demonstrated that both intracranial and extracranial structures were involved in the reaction pattern. Finally, and perhaps most important, he discovered a neurohumor elaborated in the tissues as a result of excitation in the central nervous system.

Had he lived, his final hypothesis that disordered vaso-activity in this syndrome reflected an adaptive response to a threat to the integrity of the brain itself would have been put to further test. Harold Wolff allowed himself no resting points of satisfaction. He spelled out clearly that many aspects of disease, including those associated with life-threatening tissue damage, may be looked upon as functions of man's goals, his methods of achieving them, and the conflicts they engender.

May I close by quoting from Doctor Fred Plum, Anne Parrish Titzell Professor of Neurology at New York Hospital and Cornell University Medical College: "Doctor Wolff saw both the broad pattern and the minute detail . . . he evoked from students at all levels performance beyond any previously realized capacity." And from Doctor Stewart Wolf, Professor of Medicine, and Director of the Marine Biomedical Institute, The University of Texas Medical Branch at Galveston: "It is not given to many men to influence the trend of scientific thought of a generation. Harold G. Wolff had that distinction. The full force of his influence is still to be felt."

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On May 15, 1973, Henri F. Wendel, M.D., Vice-President of the Medical Society, presented a silver tray to William O. LaMotte, Jr., M.D. in appreciation of his twenty-nine years of "meritorious service" to the Medical Society of Delaware and to medicine in general. The tray is traditionally given to retiring presidents of the Medical Society. This marks the first time that the tray has been presented to a Society member other than a Society president. The presentation was made at a meeting of the New Castle County Medical Society.

Dr. LaMotte will begin practice in Chestertown, Maryland on August 1. Dr. Wendell will replace Dr. LaMotte as the Society's Delegate to the American Medical Association.

President's Page

A MEDICAL SCHOOL FOR DELAWARE

In 1964 Delaware Medical School Feasibility Study, popularly known as the Penrod Report, made the following recommendations regarding a medical school in Delaware:

1) That the establishment of a tax-supported medical school in Delaware not be undertaken in the next decade.
2) That the long-range plans of the state and of the University of Delaware include provisions for the beginning of a new medical school in Delaware in about 10 to 15 years.
3) That efforts be extended to obtain financing for a full medical school with clinical facilities to begin some 10 to 15 years hence and that a two-year school be planned only if it is necessary to phase this development over several years.

The University of Delaware has chosen to play a leadership role in proposing a program for a medical school in Delaware. In April of this year a program model for a six-year education continuum beginning with admission to the University was presented at a hearing before the academic community and concerned citizens. Its essential features are an integration of pre-professional and professional curricular components into a medical education continuum, maximum utilization of existing resources at the University for the instruction of students, maximum utilization of existing health care resources throughout Delaware for clinical instruction, minimization of new capital expenditures, and provision of opportunity for emphasis on interrelationships among various health professional curricula.

It seems likely that a medical school within the State of Delaware would have a favorable effect on the availability of medical education to Delaware students without dislocating them from the State of Delaware, would upgrade the University's medical and paramedical education facilities, would give more local control over the type of program so that it can be tailor-made to Delaware's needs foremost and national needs secondarily, and would keep Delaware tax-based funds within the State of Delaware.

It is difficult, therefore, to believe that a medical school in Delaware could be anything other than a plus providing it could be properly funded.

Financial considerations, therefore, loom as the number one deterrent towards the development of a medical program. The proposal from the University suggests they have some unique ideas for solving the financial difficulties that seem to plague other medical schools. A very close look at this financial structuring and further innovative ideas will be necessary before we can be sure that the financial base is sound.

The University of West Virginia went a long way towards solving its financial problems before embarking on a medical school by passing a specific tax of $.01 on all soft drinks. This money goes totally toward support of the medical school and apparently has been successful. If the financial problem can be solved, we can then turn our task to what we are more appropriately qualified for, and that is the planning of the curriculum and the development of an adequate faculty system throughout the State. Although most of the training will obviously be in the Newark-Wilmington area, the proposal for developing student and post-graduate training programs in Kent and Sussex County hospitals may turn out to be a vitally important portion of the program because the spin-off of this should be extremely helpful in obtaining and holding practitioners in the rural areas.

Joseph R. Elliott

Editorials

DEFENDING OUR SELF IMAGE

As physicians we have traveled a long, hard road of study and training to prepare ourselves for a powerful role of helpfulness to others. In our daily practice we must continue to improve our capabilities for coping successfully with the complex medical problems that are brought to us. One of the most difficult situations for us to manage as physicians is that in which in spite of our efforts we are unable to provide effective help to a patient. The situation becomes more unbearable when we learn that our failure was related to our inability to define the particular problem correctly as one for which we have learned a solution.

Dr. Heym's paper on the Impostor Patient begins on page 155.

It is human nature to use mental mechanisms to shift the focus of responsibility for our failures in order to protect our self image and self-esteem. Among the most common defense mechanisms are repression, denial, and projection. All of these defenses seem to be active in Dr. Heym's paper on the impostor patient and are specifically illustrated in the sentence, "The only semi-successful approach to date has been case reporting and general awareness by the medical community so that medical resources are not wasted; this is more of a benefit to the hospitals and doctors than a 'cure' for the patient." We see repression of awareness of specific failures on the part of the initial examining physicians. The denial of the doctor's responsibility is only partial since the second clause of this sentence recognizes the failure to meet the patient's needs. But the projection of the responsibility to the patient is contained in the implication that it is the patient who is wasting medical resources.

As physicians we are first of all human beings, and we must protect our own self-esteem in order to be able to continue to practice effectively. Nevertheless, we must be aware of our need to use defenses and learn to look behind them in order to avail ourselves of all the facts that are necessary in reaching solutions to the complex medical problems.

Difficult and painful patients such as the one described by Dr. Heym offer good teaching opportunities which emphasize the importance of careful history taking and careful exploration of alternative diagnostic possibilities.

It is noted that the patient made references to having turned the controls of a TWA airliner over to a copilot. There was the implication that he was continuing active service as a pilot. From this point of view, there seems to be some basis for questioning the credibility of his story, and it should have been a simple matter to check with the airline if, in fact, this was his employer. Similarly, this reflects the importance of documenting an occupational history.

There is no information given in regard to close relatives. Inasmuch as he was placed on the critical list on admission, it is surprising that there was not a more vigorous pursuit of family, relatives, or friends. Such a pursuit might have caused an earlier unveiling of the type of patient that was presenting.

One final area of exploration which might have been productive: it would be interesting to know to what extent the presenting condition was iatrogenic. It would be diffiicult to put together a longitudinal history, but difficulty is not an adequate excuse for failing to do that which would be to the benefit of the patient. Such a longitudinal history might reveal that some of his initial hospitalizations were for conditions which were more nearly normal medical problems, but which as the result of their management and a failure to recognize significant social and emotional factors in the background, were handled in a manner which contributed to the ultimate development of the syndrome as described.

V. Terrell Davis, M.D.

WHAT PRICE A NUCLEAR REACTOR FOR DELAWARE?

For the past six months there have been advertisements in the local newspapers and on the principal state radio stations publicizing the advantages of building a nuclear reactor near Summit Bridge, Delaware, for the production of electric power. This reactor will utilize the water of the Chesapeake and Delaware Canal for the intake of water for cooling and will discharge this heated water as a waste product. In this advertising material many of the excellent advantages of the electrical energy production free of air pollution, etc. are strongly stressed, but little or no stress is placed on the many obvious disadvantages of the radioactive and thermal waste from this type of fission nuclear reactor.

The problem of the energy crisis has reached a critical stage. Almost daily articles are written pro and con in our daily newspapers and popular magazines. Oftentimes under the cloak of necessity, citizens are misled by government and big business into a hasty decision which later the community of citizens greatly regrets.

Another very important phase of the power company maneuvers has been the projection of an idea of an energy crisis. Often the crisis would appear to be self-induced. Since the late '60's conservationists have challenged estimates of future energy requirements, projected and presented by power companies. Usually these projections are accepted by government agencies and acted upon in good faith. However straightforward this may appear, the conservationists insist that part of the increase in energy utilization has been induced by the power industry itself, through sales programs. They also insist that prudent energy use would eliminate waste and reduce future energy requirements.

The environment of all living things, be they plant or animal, must have three properties: (a) it must contain a source of material and energy—food stuffs; (b) it must contain nothing incompatible with life; and (c) it must provide for the wastes generated by the living system. Man, if he possibly can, should avoid altering his environment with non-convertible radiation, which would definitely be incompatible with section (b) of the statement above. This is a biological axiom, and if we men defy it, we must pay the consequences.

In the fossil fuel electrical generation plants, we do have air and water pollution being produced by such substances as sulfur dioxide, carbon monoxide, and particulate matter; but these are stable compounds, and there are ways and means of eliminating them or rendering them harmless. But radioactive isotopes are actually deranged atoms whose high energy emissions from the nucleus of the atom cannot be stopped, since the radioactive isotopes decay in terms of half life. Some decay in a thousandth of a second and others in terms of hundreds of thousands of years. For instance, plutonium 239, a basic element of the nuclear reactor, has a half life of 240,000 years. Since there is no way to turn off nuclear isotope emissions, radioactive pollution is in a class by itself. Hence all these plants may have significant environmental health hazards because of the continuous accumlation of this radioactive material in the food chains of plants and animals, which eventually become the food of man. It is evident that at our present state of knowledge we do not have instruments or accrued knowledge necessary to adequately predict the genetic and other pathologicial effects of continuous small accumulation of radiation on the developing human body in the next twenty to thirty years.

Also the accumulation of fission products in spent fuel elements makes it necessary to provide transportation and permanent storage of these radioactive waste products. Water used as absorbers and conductor transporters of heat from the nuclear reactor must either discharge into a water source or be evaporated into the atmosphere in large stacks. Discharge of this waste heat into a natural water course could raise the temperature of the upper several inches of the water surface four to five degrees for an area of about one half square mile, and this would be continuous and permanent. The additional heat of the surface layers of the water would be generally harmful to the surrounding aquatic plant and animal life.

For the reasons stated in this editorial it is my belief that the citizens of Delaware should look into developing other means of electrical power. All forms of alternative power should be tried, such as solar, geothermal, wind, tidal, etc. Also until these non-continuing methods can take over the full share of electrical energy production, the use of the already known process of converting coal to low sulfuric oil as fuel for generating of electric power should be done. Naturally this will take some sacrifices on the part of the company by lowering its profits and on the part of the consumer because of high prices paid for electric energy produced. The greatest users should bear the greatest cost of electrical energy; this may act as an encouragement for industry to curtail waste of electrical energy and be a spur for the average citizen to be more careful in the use of electric energy.

A clean environment is everybody's business, and we of the health profession must make our voices heard in the best interest of the people of our State.

A.C.W.

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* * *

DOGMA

People are resistant to change. That sentence should probably be in quotations, but it has to have been said in almost every language for several millenia. It is the anathema of most salesmen, particularly the hardy and forbearing group of pharmaceutical manufacturers' representatives. (How many millions were spent to launch pentazocine?) Most practicing physicians prefer to think that they are exercising a wise and prudent attitude when not immediately embracing a new drug for immediate trial in their polypharmaceutical bag. We agree. But beyond this type of wise resistance may lie dogmatism.

One of our problems in graduate medical education is teaching new dogs to learn old tricks. How valid are the old tricks? How dogmatic are the new dogs? The former is reasonably disposed of by shortening the lengthy story of the lovable old medical professor addressing his students for the last time. Briefly, he said: "Gentlemen, I have told you all that I have learned in a lifetime of medical practice. In the next ten years, only half of this will prove to be true. I just wish I knew which half." The latter, we have thought about at some length. It might be synthesized by saying that dogmatic thinking does more than consign an individual to an unnaturally limited intellectual world. It deprives him of certain facilities in important mental processes. These include the capacity to synthesize abstract ideas, to solve problems, and to follow what, hopefully, have become learning patterns (as opposed to specific knowledge).

It was with no small satisfaction that we learned (in the *Journal of Educational Psychology* 60:365) that someone had made a good, reasonably objective, if somewhat small, stab at proving what we thought to be the case all along (nifty rationalization on our part).

Dr. John T. Mouw (a psychologist) at Southern Illinois University studied 84 students enrolled in teacher-education courses at the University of South Dakota. In brief, to determine the penalties of closed-mindedness, he posed questions to the group designed to elicit their relative knowledge of ideas and facts, either by recognition or recall; their comprehension of a literal message; their application of abstractions to concrete situations; their analysis of material into its constituent parts; and their synthesis of separate elements into wholes.

Using mathematical analysis (which is beyond our ken) of these results enabled Dr. Mouw to divide the 84 respondents into two levels of aptitude, three levels of dogmatism, and five levels of cognitive skills. He said, "This allowed for the test of dogmatism and cognitive process while isolating sources of variation that could confound this interactive effect."

He felt that the closed-minded students tended to perform poorly as tasks they were asked to do became complex or autonomous. The nondogmatic students improved their mean performance under the same conditions. The inherent difference between the two groups, he said, is "in the degree of personal responsibility and involvement required." Knowledge requires little personal commitment to the task. All that is necessary is to repeat what some authority—in person or in writing—has stated. On the other hand, synthesis requires the reliance on oneself to attempt divergent thinking, analysis, possibly abstract reasoning toward the solution of the problem at hand.

How valid are the old tricks? How dogmatic are the new dogs? *Nihil novi.**

S.W.R.

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*Nothing new.

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Deaths

VERNA STEVENS-YOUNG, M.D.

Dr. Verna Stevens-Young, gynecologist and obstetrician, died January 6, 1973. She was 73 years of age, having been retired four years.

Born in Canada, she obtained her medical degree from the University of Manitoba in 1925, as an honor graduate.

Licensed in Delaware in 1927, she became an American citizen in 1932, and practiced in Wilmington for nearly 40 years.

The oldest of three sisters, she entered a medical career in the company of a physician-sister, during an era when few women were in active medical practice.

An elder of Hanover Presbyterian Church, she also attended services in other churches. Philanthropic by nature and possessed of great empathy, she was more than generous in her often anonymous support of personal and community projects. She was a competent diagnostician in her specialty.

Her husband, Howard P. Young, died in 1962.

She is survived by a son, Phillip, and two sisters, Iva Stevens Merritt, M.D. of Norman, Oklahoma, and Mrs. Charles E. Maroney of Wilmington.

* * *

E. HARVEY LENDERMAN, M.D.

E. Harvey Lenderman, M.D., died April 14, 1973. He was 87 years of age. A native of Wilmington, he moved to Rehoboth Beach in 1953, following retirement. He was a graduate of the University of Pennsylvania School of Medicine; he practiced in Wilmington 40 years. During World War II he served as a captain in the Army Medical Corps.

He was a former Chief of Staff at the Wilmington General Hospital. Those of us who served under him as interns have memories of a dedicated physician. He gave fully of himself and demanded the best from his associates. A stern taskmaster and meticulous surgeon, he had little patience for student inattention or careless inadequacy. These traits made him the idol of his patients and nurtured the respect of his fellow physicians. He was the last member of a surgical ensemble, which many years ago, laid the lattice-work for the present-day improved surgical techniques.

A member of the Rehoboth Country Club, he was an avid fisherman and hunter. Myrtle Hudson Lenderman, his wife, passed away in 1961. He is survived by a son, E. Harvey Lenderman, Jr.; two sisters, Mrs. Clara Clymer and Miss May B. Lenderman, both of Wilmington; a brother, Hal Lenderman of Washington, D.C.; two grandchildren; and four step-grandchildren.

* * *

EDGAR WILLIS HAINLEN, M.D.

Dr. Edgar Willis Hainlen, 77, who served as director of medicine at the Emily P. Bissell Hospital for eight years preceding his retirement in 1960, died June 10, 1972 in Rochester, N.Y. after a lengthy illness.

Dr. Hainlen was born in Hummelstown, Pa. He attended Dartmouth College and graduated from McGill University Faculty of Medicine, Montreal, in 1924. He was a veteran of World War I.

Dr. Hainlen was a member of the American Thoracic Society, American College of Chest Physicians, and editor of *Scalpel and Tongs Journal of Medical Philately* from 1963 to 1971. Dr. Hainlen had won numerous awards and trophies for his stamp collection.

He is survived by his wife, Elizabeth Peacock Hainlen.

KARL A. SEMLAK, M.D.

Dr. Karl A. Semlak was killed in an automobile accident February 24, 1973, while vacationing in Jamaica. Also killed in the accident were his wife, Joanna, and their two-year old son, Kristopher.

Dr. Semlak was 42 years old, having practiced orthopedic surgery in the Wilmington-Newark area since 1969.

He was born in Jesenice, Yugoslavia, and lived in Linz, Austria, as a child. After coming to this country, he attended Carnegie Institute of Technology in Pittsburgh where he obtained a doctorate in metallurgy. He worked as an engineer for the E. I. duPont deNemours Company from 1957 to 1960, when he resigned to attend the University of Pittsburgh Medical School. He interned at the Delaware Hospital, and returned to Pittsburgh for residency training at Children's Hospital and the Veterans Administration Hospital.

His personal interests included tennis, swimming, skiing, and travel.

Dr. Semlak is survived by his son, Erich, eleven months old; Sarah, a daughter by a previous marriage; his mother, Mrs. Angela Semlak, living in Austria; a brother, Roman, also in Austria; and a sister, I. S. Nabersoi, of Sao Paulo, Brazil.

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MUSIC SOOTHES THE HEART

Dr. Frank B. Flood, Chief of Cardiology at St. Joseph's Hospital, Yonkers, New York, has conducted a three-year study of music as therapy in a cardiac intensive-care unit and concludes that music soothes the ravaged heart. The unit's mortality rate has been eight to ten per cent less than the national average.

Associated Press

Book Reviews

THE AMERICAN MEDICAL MACHINE by **Senator Abraham Ribicoff** with **Paul Danaceau,** Saturday Review Press, New York, 1972, 212 pp. Price $6.95.

The first thing this reviewer doesn't like about this book is the title. The word machine must have been purposely chosen to imply that American medicine is all materialistic and impersonal, so that the author might get a lot of political mileage out of it even from those who never open the book. This is unfair, for many more will see the title than will read the book, and those who do read it will find the author to be not so anti-doctor as he is pro-reform of the whole health care system. While some reform may indeed be necessary, some of the author's reasoning just doesn't sound right. The fundamental issue involved is said to be the responsibility of the medical profession to serve the nation. We all should serve the nation in one way or another, but is not the fundamental responsibility of the physician to serve his patient? It is then stated that the only real issue in medicine is to establish the proposition that to receive medical care is a right, to provide it is a privilege, and the way to do this is to make the health of all the American people public business. We might agree that a very important part of being a physician is to view every patient contact as a sacred trust and that this responsibility is all too often abused, but does the author really think that the American people will benefit from a system in which the patient receives medical care as a right from a physician who has the privilege of working for the system, but no right to choose and work for the patient? The Senator just does not understand the incentives and motivations which are the catalysts in the patient-doctor encounter.

But in spite of those areas of hollow thinking which are typical of the political approach to a complicated problem, and which account for another theme of this book—that medicine is far too important to be left to the doctor—in spite of all these things, this reviewer believes the author is trying here to make a sincere and constructive contribution to the health care controversy. What are his basic proposals?

To implement the public policy that health care is a right, there should be federal financing of universal entitlement to such care. Since the sky can no longer be the limit, a cost ceiling must be set by Congress or somebody, and all health providers will somehow be paid by some pro rata method within that limit. (Sounds now like the Kennedy-Labor plan.) But the Senator does not believe the program should necessarily be centrally administered. Instead of turning the whole program over to the federal government on the one hand or to the private insurance industry on the other, he suggests that each state make its own decision on how the program ought to be administered, but within federally set standards of entitlement, administration, cost control, and quality control, particularly in respect to the performance of individual practitioners who should come under much greater scrutiny.

Because the American market place has always done much more for providers than it has for consumers, because the person who needs medical care is a captive consumer within a strictly providers' system, and because providers do not understand where their privileges end and the rights of patients begin, the author suggests that the most important change to be brought to the American medical care system is the creation of a federal "inspector general" responsible only to patients and through whom the consumer (the mod word for patient) can influence the medical care system.

It is to the author's credit that he recognizes the potential of many pitfalls in the development of this new system, and suggests that we ought to run pilot programs in several states before the total program becomes fully operational.

There are many other suggestions for changes to be developed, such as national licensure with built-in means of weeding out incompetents, geographic distribution of physicians by compulsion according to determination of need, training of specialists not by choice of the individual but by national determinations of specialty needs.

There are indeed problems in our health care delivery system yet to be solved. Some would have us believe that these problems constitute a national crisis. Perhaps they do. But those who, like Senator Ribicoff, offer solutions to these problems, must also convince us that the treatment is not in some cases worse than the disease, perhaps even to the point of killing the patient.

William O. LaMotte, Jr., M.D.

* * *

THE DESCENT OF WOMAN by Elaine Morgan, Stein and Day, New York, 1972. Price $7.95.

Ms. Morgan is one of the new breed of articulate, emphatic, fearless women who are at pains to announce stridently to the world that the hitherto conventionally accepted subjugation of women — emotional, economic, philosophic and sexual — is unwarranted, unjust, prejudiced, and must stop. Ms. Morgan believes that cultural anthropologists have for too long studied and pontificated on the evolution of *man* without considering that the evolution of *woman* was proceeding simultaneously, was relevant to the evolution of *man*, and was not necessarily nor even probably identical. Ms. Morgan (she is really Mrs., mother of three) is gutsy and somewhat ribald. To wit this passage:

"Men have been asked about their cycles, too; and various experts have proclaimed the male cycle to be (a) annual, (b) twice a year, (c) lunar.

"Kenneth Walker in *The Physiology of Sex* states that 'in the majority of men it is somewhere in the region of a week.' He's probably right. But I'd say that had less to do with a man's hormones than with the knowledge that he doesn't have to get up early on Sunday."

She is described in the jacket blurb as Oxford educated; whether she was educated as an anthropologist is not mentioned, so I presume she was not. Neither have I been, so I cannot critique this book with respect to its theory, but I thought it was funny. It may not, however, be any more fair than the works she criticizes. For example, Darwin's book was, not as she says several times, *The Descent of Man*, but rather, *The Descent of Man, and Selection in Relation to Sex.* So Darwin did recognize there were two kinds.

Bernadine Z. Paulshock, M.D.

* * *

SWEET AND DANGEROUS by John Yudkin, M.D., Peter H. Wyden, Inc., New York, 1972. Price $5.95.

This book is written mainly for lay readers and, it would seem, particularly for Americans. The author has emphatically advocated the theory that refined sugar is the main cause of atherosclerosis and coronary artery disease. He presents considerable evidence to support his theory. He is careful to point out that sugar is not the only cause of coronary disease and even admits that it has not yet been proven to be the main cause. In his book he makes an effort to differentiate between proven facts and speculation. However, he is not successful in this. Anyone not conversant with medical dietetic matters most certainly will consider that Dr. Yudkin's speculations are presented as fact or gospel.

Nevertheless there is a lot to substantiate the deleterious effect of refined sugar. Probably more coronary disease exists in the United States than in any other country. To be sure in this country there may be more tension, less exercise, greater consumption of tobacco and alcohol, and a larger consumption of saturated fat than in other areas. However, there is also a much higher consumption of refined sugar. It has increased in the last 100 years from about 8 pounds per American a year to 110 or 112 pounds. Saturated fats are likewise increased since it is difficult to consume that much sugar by itself—chocolate candy, pizza, pies, and other pastries for instance. A number of workers such as Ahrens,[1] Kuo,[2] and Ostrander[3] have demonstrated the hyperlipidemic effect of refined sugar over and above the effect of saturated fats. A high percentage of polyunsaturated fats may lower serum cholesterol, but so does reduction of sugar in the majority of Americans tested. There is also some evidence to the effect that certain nutrients such as vitamin C, niacin and choline may lower serum lipids.

If the total calories consumed remain low and refined sugar limited or kept very low, there is little to be feared from cholesterol or triglycerides in the presence of sufficient vitamins. Also there are many recent reports which indicate that excess circulating insulin may be a real factor in the etiology of coronary disease whether induced by eating too much sugar, which probably is very common, by eating too many total calories and by taking too much insulin, or by over-stimulation of the Islands of Langerhans by sulfonylurea drugs.

It is probably true that some individuals are more prone to atherosclerosis and coronary disease than others given the same diet. There may be some ethnic differences. It seems equally clear that the majority of American people develop high blood lipids when they consume large quantities of refined sugar, probably more than on a high saturated fat diet with low carbohydrate intake.

LEWIS B. FLINN, M.D.

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REVIEW OF MEDICAL PHARMACOLOGY by **Frederick H. Meyers, Ernest Jawetz** and **Alan Goldfien,** Lange Medical Publications, Los Altos, Calif., 1972. Price $8.50.

Lange Medical Publications describe themselves as "A Concise Medical Library for Practitioner and Student," and this is exactly what this book is. It gives a fairly good review of all the science of pharmacology; its ideas are as up-to-date as a textbook can be. Although it leaves gaps in some subjects, this can be easily filled by looking them up in more extensive books of pharmacology if necessary.

The book is divided into eight parts. The section on autonomic and cardiovascular drugs, so very important and many times difficult to understand, is extremely clear and easy to grasp. A leading drug is given for each of the four types of drugs that affect the autonomic nervous system, and after it is explained, the other drugs in that group are mentioned. Only the absolutely necessary formulas are given without filling pages with formulas which, though important to the chemist, are unnecessary from the clinician's point of view.

Such a difficult subject as endocrine drugs is reviewed in only ninety-two pages, and after reading this section I think the medical student as well as the practitioner who has forgotten his basic science will get a good idea on how endocrine drugs work from this chapter.

The section on toxicology is accurate and up-to-date, and the book is thus a quick reference to check therapy when it becomes necessary to treat an acute intoxication.

In summary, I think this book has advantages for house officers, practitioners, and physicians who may be studying to take board examinations. The medical student who wants a broader understanding of pharmacology should supplement this book by reading in the more extensive textbooks of pharmacology.

LAZARO GUERRA, M.D.

⁂

HEREDITARY RETINAL AND CHOROIDAL DISEASES by **Alex E. Krill, (Volume I, Evaluation)**, Harper & Rowe, Hagerstown, Md., 1972, 354 pp. Price $19.75.

This book is a summary of diagnostic techniques useful in the evaluation of retinal diseases in general, and hereditary retinal and choroidal diseases in particular. It is the first volume of a projected set which would later include a book on specific diseases. The subjects covered include genetic principles, fluorescein angiography, electroretinography, electro-oculography, visually evoked responses, and the evaluation of night vision and color vision. The topics are covered in greater breadth than depth and therein provide a satisfactory introduction for those unfamiliar with the principles and techniques discussed. At the same time, it is a good general review for those who have had some experience in the field.

One of the more valuable discussions in the book is the section reviewing fluorescein angiography. This procedure, which has been used by ophthalmologists for about ten years, is one of the most valuable techniques for understanding retinal pathology. Broad general principles are discussed with application to many problems involving altered retinal circulation. These problems include diabetes, papilledema, and retinal tumors, as well as the more subtle changes of hereditary chorio-retinal problems. The photographs illustrating this section are very nicely done.

The precise investigation of decreased night vision and dark adaptation requires equipment and controls which are not generally available outside of large medical centers. The discussion given in the book is brief, but lucid.

In sum, this volume would have its greatest value for those wishing a brief introduction to, or review of, the techniques used in investigation of general retinal disorders.

Stephen H. Franklin, M.D.

* * *

DEALING WITH DRUG ABUSE. A Report to the Ford Foundation: The Drug Abuse Survey Project, by Patricia M. Wald and Peter Barton Hutt, Co-Chairmen, et al, Praeger Publishers, New York, 1972, 396 pp. Price $8.95.

During the last ten years the misuse of multiple drugs has spread like an epidemic throughout all spheres of our society. The many different programs that have been instituted in an attempt to stem drug abuse have met with only limited success. Institutions, both public and private, have made major broad-scaled efforts in the areas of education, prevention, and treatment, and still the deadly specter of the widespread misuse of both legal and illegal drugs haunts our community. The Ford Foundation has become interested in undertaking a large program to deal with drug abuse and as a first step has issued a report consisting of a series of related papers dealing with the drug problem today.

The introductory paper gives a general view of the nature and extent of drug abuse in society and examines briefly the basic research on drug abuse and the work that is being done in education, prevention, and treatment. The authors of this paper, Patricia M. Wald and Peter Barton Hutt, both co-chairmen of the Drug Abuse Project Survey, indicate that a major problem in this field is lack of effective leadership both on a governmental and a non-governmental level. As a means of providing direction, they propose the formation of a Drug Abuse Council that would fill the leadership void and provide a center for directing research, furthering education and striving for more positive results in prevention and treatment.

A chapter on drugs and their effects is written by a "layman for laymen," yet it provides a good review of the psychopharmacology of the most frequently abused drugs without using terms that are too technical. The opiates are discussed in relation to their origin, medical uses, physical effects, and tolerance. Hallucinogens, stimulants, and tranquilizers are discussed in similar detail with emphasis on their destructive effects as a consequence of prolonged abuse.

Further staff papers in this volume cover the usual subjects in this area. There is a chapter on the work that is being done in drug education in the schools, a monograph on treatment and rehabilitation, and sections on federal expenditures on drug control in the United States and federal programs in drug control in Great Britain. A chapter on altered states of consciousness is short, and the subject perhaps could have been better scheduled in the dicussion on the pharmacology of drugs to avoid repetition.

This volume is presented as a series of papers, and consequently there is considerable overlapping of the topics which is somewhat confusing. Yet drug abuse is a confusing topic surrounded by considerable controversy. The authors are to be commended in that they have defined so well the current problems in dealing with drug abuse and clarified the goals that drug abuse programs should seek.

David I. Lintz, M.D.

* * *

REVIEW OF MEDICAL MICROBIOLOGY by **Ernest Jawetz, Ph.D., M.D., Joseph L. Melnick, Ph.D.** and **Edward A. Adelberg, Ph.D.,** 10th edition, Lange Publications, Los Altos, California, 1972, 504 pp. Price $8.00.

This tenth biannual revision is a remarkably complete review of microbiology and immunology. It continues to be well-organized and easy to understand. Written primarily for the microbiology student, the first hundred pages include mostly classifications, morphology, molecular biology, and genetics. Succeeding chapters describe all of the bacteria, viruses, fungi, and parasites known to infect humans and will serve as a handy reference source to those organisms that are least often encountered. Techniques useful in diagnosis are also described in some detail.

Information of value to the physician is included. The chapters concerning antimicrobial chemotherapy, allergy and hypersensitivity and host-parasite relationships are up-to-date, and much of the most useful information is presented in tables. The virology section is especially rich. Brief descriptions of recently developed techniques such as immunofluorescence, counterimmunoelectrophoresis, and radioimmunoassay may aid in evaluation of data presented in the current literature. The references are few but very current, including several from 1972.

The complete and concise manner in which a large quantity of material is presented recommends this paperback book.

Janet L. Clark, Ph.D.

* * *

FEMALE SEX ANOMALIES by **Cary M. Dougherty, M.D.** and **Rowena Spencer, M.D.,** 1st edition, Harper & Rowe, Hagerstown, Md., 1972, 288 pp, 161 illustrations. Price $12.75.

This is an excellent review of the normal and abnormal development of the female genital organs. Comparison is often made with the male counterparts, and most of the anomalies are illustrated by detailed case histories, karyotypes where appropriate, and photomicrographs.

The role of chromosomes in differentiation of sex, the various inductors and their anomalies are very well illustrated. Diagnosis and management of ambiguous sex, including the psychological aspect, are briefly but adequately described. The chapter on unusual ovarian development deals with primary ovarian failure associated with abnormal sex chromosomal patterns other than the well-known 45xo karyotype and 45xo/46xx mosaicism as well as with normal karyotype 46xx|

The chapters on anomalies of the uterus and vagina are extremely well written and different abnormalities documented with appropriate case histories. The repeated emphasis on the association of urinary tract and genital tract anomalies serves as a constant reminder of the significance of complete diagnostic survey of the renal system in those patients who have a genital tract abnormality.

The entire volume is easy to read and understand, and residents and students as well as the practicing gynecologist can benefit a great deal from reading it. "Laparotomy" is frequently given as the method for inspection of the internal genital organs, whereas laparoscopy — a technique rapidly gaining wider popularity — deserves some recognition.

M. Imran, M.B., B.S., MRCOG

Letters to the Editor

To the Editor:

The following comments are in response to the Editorial, "Tuberculosis Care in General Hospitals in Delaware: Why Not and When?", in the May 1973 issue of the *Delaware Medical Journal.*

The picture painted by Doctor Mires fills only one side of the canvas. The other side is occupied by the patient who does not respond quickly to treatment, whose sputum remains positive, whose organisms are resistant to first-line drugs, and who has neither the physical nor the economic resources to care for himself. He remains hospitalized for a long time.

Current statistics from the Emily Bissell Hospital indicate the average daily stay to be approximately 100 days. There are only two possible interpretations of that figure: (1) that patients are being kept for an abnormally long time, or (2) that my original premise is correct. My thirty years' experience in this field makes me believe that the second interpretation is likely. If this is so, then somebody is going to have to provide long-term care for this group of patients. There is certainly no room for them in general hospitals. The past performance of the State in providing for indigent care in general hospitals leaves me no room for believing that they will do better in this instance.

I believe that the treatment of some patients in general hospitals is entirely feasible. I do not agree that this can be accomplished simply by having third party insurers agree to pay for their care. This is still a disease transmitted by airborne particles, and the basics of infectious disease control cannot be ignored. Areas will have to be provided with separate ventilation systems, nurses and physicians trained in the treatment of tuberculosis, and laboratories geared to monitoring the course of the disease. All of this would have to be accomplished in a number of hospitals while still maintaining a State facility for the long-term patients.

Doctor Mires states, "The leading chest specialists in Delaware have been asking for some time when this change would come about." I am not certain that I would be classified as a "leading chest specialist," but as a member of several committees both of the New Castle County Medical Society and of the Medical Society of Delaware, I am unaware that the Division of Public Health ever consulted these committees. On the contrary, the committees have made repeated inquiries without ever getting a satisfactory answer.

I do know that the medical community is willing to sit down and discuss the issues but not to debate them in the public press or to have them forced on us by third party insurers.

LEONARD P. LANG, M.D.
Director, Department of Medicine
Wilmington Medical Center

* * *

"Certain things repugnant to the *reason* find acceptance among rational people simply because they are unusually spoken of."

Immanuel Kant

In Brief

Speakers on "Ask the Doctor"

Speakers for July, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: July 3, Richard Kennedy, M.D., *Mammography;* July 10, Forrest G. Hawkins, M.D., *Current Immunization Practice;* July 17, John J. Egan, M.D., *Swollen Glands;* July 24, Robert Meckelnburg, M.D., *On Confronting the Reality of Death;* and July 31, Marjorie J. McKusick, M.D., *Teenage Pregnancies.*

In The News

William J. Holloway, M.D., Director of the Infectious Disease Research Laboratory at the Wilmington Medical Center, was elected President of the Delaware Lung Association earlier this month. The agency recently changed its name from the Delaware Tuberculosis and Health Society.

The Medical Society of Delaware was one of twenty-seven state medical societies which received a Membership Achievement Award for increasing its AMA membership during calendar 1972. Others were Alabama, Alaska, Arizona, California, Washington, D.C., Florida, Georgia, Guam, Hawaii, Idaho, Illinois, Indiana, Kentucky, Maine, Minnesota, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, Puerto Rico, South Carolina, Tennessee, Texas, Virginia, and Wisconsin.

Chaplain Lynwood Swanson of the Wilmington Medical Center and Charles Bancroft, M.D., chairman of the Committee on Medicine and Religion of the Medical Society of Delaware, have participated this year in programs at the Tri-State Hospital Association Conference, Washington, D.C., the Wilmington United Methodist Church, the Washington, D.C. Committee on Medicine and Religion, the Wilmington Presbyterian Church, and the University of Delaware. In addition, Chaplain Swanson has been managing a thirteen-week series of continuing education seminars on Anxiety which he designed and implemented through his Department of Pastoral Care.

Richard H. Morgan, M.D., of Wilmington, has recently been made a Fellow in the American College of Physicians. New fellows in the society earn fellowship honors through scientific accomplishment and by acceptance as leaders in their specialties.

Drs. Joseph J. Schulz and Michael B. Peters shared the second annual award for the best paper by a house officer accepted by or published in the *Delaware Medical Journal.* The winning paper, *Fat Embolism, Pathogenesis and Proposed Protocol for Monitoring and Treatment* will appear in an upcoming issue of the *Journal.* Their prizes, a check to each for $100, were awarded by Dr. William Holloway at the interns and residents dinner of the Wilmington Medical Center this month.

Winder Laird Porter, M.D. has been given an Outstanding Citizens Award from the U.S. Department of Health, Education and Welfare. Dr. Porter served as director of venereal disease control for Delaware until his recent retirement.

James E. Marvil, M.D. was given the Distinguished Service Award of the Lewes Historical Society at its Annual Dinner Meeting on May 5th. Dr. Marvil has led the organization since its founding 10 years ago.

Jeff Cannon son of Charles Cannon, D.O. of Georgetown, Delaware, has been selected as captain of the 1973 football team at the University of Delaware.

NIH Study

The cooperation of physicians is requested in the referral of patients with interstitial pulmonary fibrosis for studies being conducted jointly by the National Institute of Arthritis, Metabolism, and Digestive Disease's Arthritis and Rheumatism Branch and the National Heart and Lung Institute's Pulmonary Branch, at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Needed are patients 40 years of age or older. Of particular interest are the etiology, mechanism, and treatment of interstitial pulmonary fibrosis secondary to scleroderma or arthritis (rheumatoid or idiopathic). Upon completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings. Physicians interested in having their patients considered for admission to these studies may write or telephone: Harold H. Newball, M.D., Clinical Center, Room 6-D-05, National Institutes of Health, Bethesda, Maryland, 20014, telephone 301-496-1597.

ACCENT on Living

ACCENT on Living, a national magazine for disabled persons, brings news of hope for the handicapped. Editor Ray Cheever, because of polio, spends most of his time in a wheelchair. Disabled individuals and interested professionals can get information by writing: ACCENT on Living, Box 726, Bloomington, Ill., 61701.

AMA Speakers and Leadership Program

The AMA Speakers and Leadership Program, which has trained more than 8,000 physicians to be effective spokesmen, will hold three seminars, September 1-2, October 27-28, and November 17-18, at the American Management Association's training facilities, O'Hare Airport, Chicago. Registration fee of $50 includes two meals, course materials, and a reception. For information write to Mr. Mortimer T. Enright, Director, AMA Speakers and Leadership Program, 535 North Dearborn Steet, Chicago, Illinois, 60610.

Tumor Control Centers

Robert W. Frelick, M.D., Project Director for the Tumor Control Center Program, has announced that the Delaware Division of the American Cancer Society is sponsoring tumor control centers in the following hospitals: KENT GENERAL HOSPITAL, 2nd Tuesday of the month, coordinated by Arthur F. Zimmerman, M.D.; MILFORD MEMORIAL HOSPITAL, 2nd Tuesday of the month, coordinated by C. Edward Graybeal, M.D.; NANTICOKE HOSPITAL, 4th Monday of the month, coordinated by Judith Tobin, M.D.; BEEBE HOSPITAL, 4th Monday of the month, coordinated by James Beebe, Jr., M.D.; and WILMINGTON MEDICAL CENTER, weekly, coordinated by E. Y. Gledhill, M.D.

The aim is to bring continuing professional education and demonstrations to the doctors throughout the State of Delaware for the purpose of improving clinical diagnosis and treatment of cancer. There will be tumor consultants who will work in the respective tumor control centers with local practitioners in consultation and care of the tumor patient.

Any physician wishing to bring a patient or patient problem may contact appointment clerks at each of the hospitals. For more information call the Delaware Division of the American Cancer Society, 654-6267.

Red Cross Drivers Needed

The Delaware Chapter of the American Red Cross needs volunteer drivers to transport medically needy patients in Red Cross wagons to clinics. The Red Cross is hoping to enlist the aid of students this summer. To qualify, one must be at least 18 years of age and have two years of driving experience. If Delaware physicians have children wanting to volunteer, they should call the Red Cross Office of Volunteers at 655-3341.

CLINICAL NOTICES AND MEETINGS

ACP Seminars

The American College of Physicians is presenting four seminars in the month of September: *Diagnosis and Management of Infectious Diseases,* September 12-14 at Howard University College of Medicine, Washington, D.C.; *Advances in Internal Medicine,* September 17-21 at the University of California, San Francisco, California; *Clinical Hematology for the Internist, Pathopysiology, Diagnosis, and Treatment,* September 19-21 at the Mayo Clinic, Rochester, Minnesota; and *Mechanisms of Hormone Action,* September 19-21 at Vanderbilt University School of Medicine, Nashville, Tennessee. For information write to the American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania 19104.

Ultrasound Conference

The Johns Hopkins Hospital, Baltimore, Maryland, is presenting a B-Scan Ultrasound Conference, September 7, 1973. This conference is designed for radiologists, obstetricians, and nuclear medicine specialists who have recently become interested in diagnostic ultrasound. It will be of particular value to those contemplating ultrasound scanning or who have recently started B-scan ultrasound. For information write to Roger C. Sanders, M.D., Department of Radiology, Johns Hopkins Hospital, Baltimore, Maryland 21205.

Psychiatric Courses

The Department of Mental Health Sciences of the Hahnemann Medical College and Hospital is offering courses for psychiatrists as well as other medical practitioners. These courses, led by Hahnemann faculty and providing American Medical Association Category I credit, are scheduled for November, 1973 as part of a Carribean Cruise. Courses will be taught on mornings the ship is at sea. For further information contact Richard Newman, M.D., Hahnemann Department of Mental Health Sciences, 314 North Broad Street, Philadelphia, Pennsylvania.

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CYSTOSARCOMA PHYLLODES

This neoplasm, which may start as a fibroadenoma, poses a challenge to our diagnostic ability and surgical judgment. Interesting diagnostic criteria and surgical guides are given in this article. A new name, cellular ductostromal fibroadenoma, is suggested, based on the macroscopical and histological picture of the tumor.

Ivan A. Lopez, M.D.

The breast is the most common site for development of tumors in the female, accounting for about 20 percent of all malignancies in women. One of the tumors of the breast frequently diagnosed is cystosarcoma phyllodes. It was described originally in 1838 by Johannes Müller in six cases. One of them was a 54-year-old man.[1] Ever since, the tumor has been reported occurring in four males,[2] although some authors deny it can arise in the male breast tissue.[3]

The name of the tumor is derived from the words "cyst," "sarcoma," and "phyllon." Müller used it to describe a benign cystic tumor of the breast, with a fleshy appearance and multiple lobulations, giving it the appearance of a cauliflower. The name has been in use to the present in the world literature. In current medical terminology, a sarcoma is a malignant neoplasm arising from the mesenchymal tissue.[4] The discrepancy between the old terminology and its current interpretation has added to the confusion which surrounds this tumor because the name itself, by definition, implies malignancy. About 27 names have been used for this tumor. More common names are cystosarcoma phyllodes, giant fibroadenoma, cellular intracanalicular fibroadenoma, Müller's tumor, myxoma intracanaliculare, and serocystic tumor.

Until 30 years ago, only eleven cases had been published in the world medical literature. As interest in the strange tumor increased, so did the number of cases published; by 1972 the cases reported have reached nearly 750, including eleven cases found in the records of the Delaware Division of the Wilmington Medical Center.

The tumor has been found with a frequency of 0.3 and 0.5 percent of all breast neoplasms; of these, 3 to 13 percent are malignant. The average age of the patients is mid-forties; the youngest patient reported was ten years old[5] and the oldest ninety years old — the latter a case reported locally.

Dr. Lopez was formerly a surgical intern at the Wilmington Medical Center.

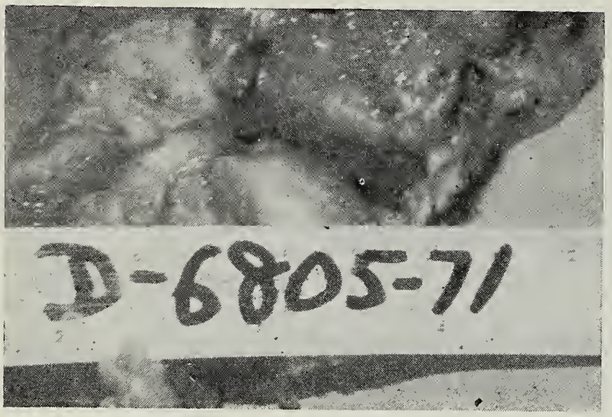

FIGURE 1

Many reports have failed to answer several important questions about cystosarcoma phyllodes, notably the difference between "benign" and "malignant" tumors and the therapeutic implications of the diagnosis.[6]

Case Presentation

A 48-year-old woman, one and a half years prior to her admission to the Delaware Division of the Wilmington Medical Center, noticed a mass in her right breast; an excision biopsy was performed. The histological diagnosis was "fibroadenomatosis with local sclerosing adenosis."

She did well for one year. After this interval she began to notice hardening and a rapidly growing mass at the site of the previous operation. At this time the right breast was asymmetrical. There was a hard, multilobulated mass not adherent to the deep layers, with color changes in the skin. There was a marked increase in vascularity of the skin overlying the tumor. The axillary content was normal on clinical examination. The patient's general condition had not been affected and her chest roentgenograph and blood work were normal.

Local excision of the mass was performed. A multilobulated fleshy tumor, 12x9x7 cm, with soft and hard areas was removed. (Figure 1) The histological picture was that of ductal proliferation, predominance of cellular stroma, moderate degree of cellular atypism, and occasional mitosis. (Figure 2) A diagnosis of cystosarcoma phyllodes was made. These slides were compared with those of her original tumor, excised one and half years previously. As some similarities were found, the slides were submitted for consultation to another pathologist, who immediately labeled the original tumor as *fibroadenoma* probably *giant fibroadenoma.* This last name is one of the synonyms for cystosarcoma phyllodes. (Figure 3)

The patient was discharged in good condition and was doing well when last contacted, eight months after the operation.

In addition to this case, we have found ten more cases of cystosarcoma phyllodes in a period of twenty-five years among seven hundred cases of tumors of the breast seen and treated at the Delaware Division of the Wilmington Medical Center from 1946 to 1971. (Table 1) The incidence was 1.57 percent among the breast tumors seen at this institution. The youngest patient was 23 years of age and the oldest 90. (The latter we believe

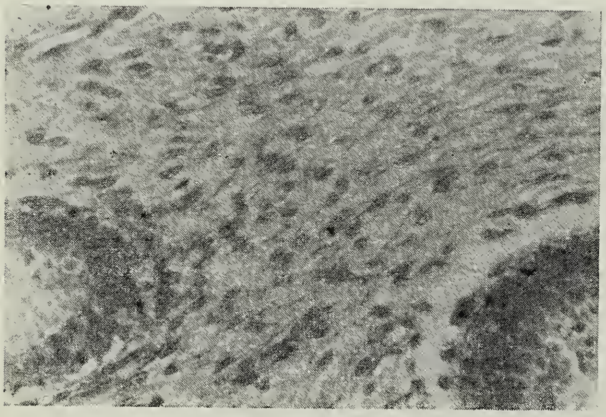

FIGURE 2

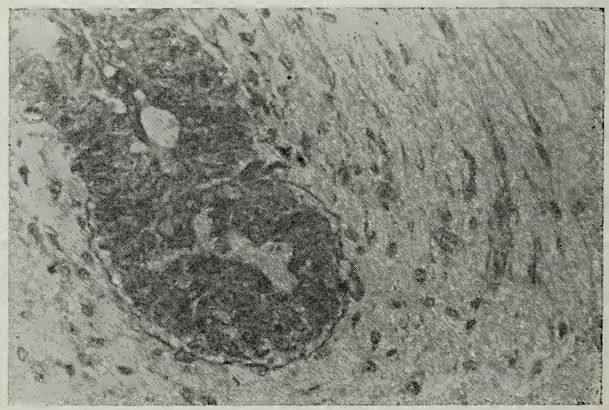

FIGURE 3

to be the oldest patient reported with cystosarcoma phyllodes in the world literature.) The average age was 53.6 years. Six of the tumors were in the right breast. All were single, unilateral masses. There were no male patients.

The pathological diagnoses were benign in nine cases, malignant in two cases. The size of the tumor varied from two to fourteen cm. The treatment consisted of local excision in seven patients and simple mastectomy in four. No radical mastectomy was performed. The follow-up ranged from four months to sixteen years after surgery. Two patients were lost to follow-up.

Diagnosis

A mass in the breast is the first and most common manifestation of this tumor, found in about 95% of the cases.[7] Clinical examination usually reveals a movable mass that may be voluminous. The tumor usually is not adherent to the pectoral fascia. The patient's general condition is not affected. Occasionally external signs suggesting malignancy can be detected, ie, nipple retraction, adhesion to the skin, enlargement of axillary nodes, fixation to the costal wall, pain, and ulceration.[8]

Usually the tumor is solitary and unilateral, involving more commonly the superior external quadrant of the breast. Occasional bilateral occurrence may be found. The tumor has been found coexisting with other types of breast tumors, benign and malignant.[3]

Untreated, the tumor will increase to a considerable size. The smallest tumor reported has been one cm in diameter, the largest forty-five cm. Reports of tumors weighing up to twenty kg have been published.[9,10] Ulceration of the skin, increased subcutaneous vascularity, and changes in skin color follow the increase in size. As the size increases, so does the tendency to become malignant. When metastases occur they are usually blood-borne, and not lymphatic. Common sites for metastases are ribs, lungs, and periaortic lymph nodes. The axillary nodes are invaded only occasionally.

TABLE 1

CASES OF
CYSTOSARCOMA PHYLLODES
SEEN AT THE
WILMINGTON MEDICAL CENTER
1946-1971

DATA IN 25 YEARS

Breast Tumors, 1946-1971	700
Cystosarcoma phyllodes	11
Percentage of Cystosarcoma phyllodes	1.57

CASES OF CYSTOSARCOMA PHYLLODES

Pathological Diagnosis

Benign	9 cases
Malignant	2 cases

Type of Surgery

Local Excision	7 cases
Simple Mastectomy	4 cases
Radical Mastectomy	0 cases

Age

Youngest	23 years
Oldest	90 years
Average	53.6 years

FOLLOW-UP PER INDIVIDUAL CASE

Case #	Period	Total Follow-up
1	1955-1957	2 years
2	1955-	none
3	1956-1972	16 years
4	1958-1972	14 years
5	1963-1971	8 years
6	1969-	none
7	1969-1972	3 years
8	1969-1972	3 years
9	1971-1972	1 year
10	1971-1972	1 year
11	1971-1972	8 month

RESULTS

Living & well — 4 months to 16 years	6
Dead — Adenocarcinoma of right lung	1
Control lost — well when last seen	2
Unknown results	2

Differential diagnosis must include all breast masses, mainly, fibroadenoma, lipoma, bulky adenocarcinoma, osteosarcoma, angiosarcoma, liposarcoma, and lymphoma. The differential diagnosis with these tumors is assisted by the microscopic examination, ie, in the case of sarcoma, the mesenchymatous proliferation is pure and virtually isolated.[8]

Other aids in the diagnosis are mammography and mammary phlebography. Coopmans et al, of the Radiological Institute of Milan, Italy, use infra-red mammography.[10] The same procedure is performed at the Radium Hospital in Oslo, Norway. Probst, of the Department of Radiology of the University of Umea, Sweden, has published excellent mammary phlebograms of the superficial vessels.[11] Both procedures take advantage of the rich vascularity of the tumor. These procedures, interesting from the academic and investigating standpoint, must yield to the final, most practiced, and most reliable diagnostic procedure: biopsy.

The specimens have a typical fleshy, multilobulated appearance. When cut, the tumor shows a multicystic aspect, and often hemorrhagic changes can be found. In these cases, the fleshy appearance of the sections is more conspicuous.

The microscopic picture is that of proliferation of the intraductal elements, increased stromal cellularity, a variable degree of cellular atypism, and variable amounts of mitoses.

The borders of the tumor, pushing or infiltrating, are noted. The surgeon must ask for the qualifying adjective of "benign" or "malignant." This differentiation is made on the basis that will be discussed later.

Prognosis

A systematic and rational study of this tumor makes it clear that to have well-founded criteria to assist in its management and prognosis, the following aspects must be considered. *Size:* Tumors larger than 4 cm in diameter have a tendency to become malignant. *Margins pushing or infiltrating:* if the margins are pushing, the evidence of malignancy is less; infiltrating margins increase the chances of malignancy. *Mitotic activity:* when there are more than three mitoses per high power field, likelihood of malignancy increases. *Cellular atypism* — graded 1, 2, 3: when the atypism is minimal, the incidence of recurrences, malignancies, and deaths is lower, and the prognosis is better.

These characteristics can be summarized as follows: Well-circumscribed cystosarcomas (those with pushing margins) have a much better prognosis than those with infiltrating margins. Despite malignant transformation, these tumors tend to remain localized for some time. Even malignant tumors can be successfully excised to produce a cure in the majority of cases.[12]

Although no definitive prognostic conclusions can be drawn from the clinical examination of the tumor in connection with benignity or malignancy, it is clear that big, irregular, multi-nodular tumors, highly vascularized, and which have produced skin changes, have a tendency to be malignant and to recur once removed.

In some cases, the malignant change may occur in a previously benign tumor. Therefore it is important that before a cystosarcoma phyllodes is classified as benign, multiple sections be examined. The tumor has a tendency to recur first in the operative site.

Treatment

Much has been said about treatment of cystosarcoma phyllodes. One fact is clear: all forms of this tumor must be treated surgically.[9] Some people advocate local excision, while others, alarmed by the angry aspect of the big neoplasm, go to the other extreme, performing radical mastectomy.[12]

Biopsy and an individual evaluation of each tumor are recommended.

It is essential to completely remove the neoplasm thoroughly to prevent local recurrences.[13] Local excision is advised for a tumor smaller than 4 cm with non-infiltrating borders. Simple mastectomy is recommended for larger tumors. Excision of the fascia of the pectoralis muscle and extension of the operation to the axillary projection of the breast may be necessary.

At the present state of our knowledge, there is no place for radical mastectomy in the treatment of cystosarcoma phyllodes. When radical mastectomy has been done, the incidence of morbidity and mortality has increased. Chemotherapy and radiation have not significantly affected the course of the malignant case.

Discussion

The term *cystosarcoma phyllodes* is misleading, as the *sarcoma* part of it suggests malignancy and, no doubt, has induced more than one radical mastectomy.

The term *giant fibroadenoma* does not apply either, as the tumor need not always be giant.

The World Health Organization gave the tumor the name *cellular intracanicular fibroadenoma,* which better describes its picture. I suggest that perhaps the name *cellular ductostromal fibroadenoma* gives a better description of this tumor, but for a long time it has been known as cystosarcoma phyllodes, and most probably this name will continue in use.

There is no doubt that the tumor is a type of fibroadenoma. Evidence is now accumulating which suggests that this neoplasm originates in a simple fibroadenoma. Diaz and Astacio, of the Department of Gynecology and Pathology of the University of El Salvador, after analysis of fifteen cases of their own and the review of the literature, agree with the findings of other investigators, among them Bader, Gedliczka, Schwartz, Wakekey, and Weiss, that the tumor originates in a fibroadenoma. These findings, in addition to the studies of series made by Treves, suggest that the tumor may develop in two ways, either from a pre-existing fibroadenoma or as cystosarcoma de novo. In our patient the tumor arose in the site where a previous fibroadenoma had been removed. Whether the second tumor arose from a fibroadenoma, or was a cystosarcoma phyllodes from the beginning, is difficult to assess. The practical implication of this information is that the surgeon should be alerted to keep a watchful eye on every patient who has had a fibroadenoma removed in order to detect recurrences in the form of cystosarcoma phyllodes.

The tumor is too unpredictable to be labeled simply benign or malignant on the basis of a single feature. All are more or less locally aggressive, and some have the capacity to metastasize. The use of the criterion of the contour of the tumor to separate non-metastasizing from potentially metastasizing tumors has proven of particular value in endometrial, stromal tumors and sarcomas of the larynx, stomach, and breast. By the same token, a direct relationship between mitotic activity and metastasis has been demonstrated in pure sarcoma of the breast stroma, soft tissue fibrosarcoma, infiltrating sarcoma of the endometrial stroma, and uterine smooth-muscle tumors.

The next logical step was to study cystosarcoma phyllodes using the same criteria.[14] Contour and size of the tumor and degree of cellular atypism and mitotic activity provide together a good means of evaluating the likelihood of metastasis. Tumors one cm in diameter have the same proliferative stroma as the larger ones. Therefore, size is only one of the considerations in arriving at a diagnosis of cystosarcoma phyllodes in distinction to earlier reports which excluded the small tumors.[9]

The classification of borderline or questionable malignant cystosarcoma phyllodes as "malignant" is not advisable, as it will increase the incidence of unnecessary radical surgery; and the follow-up of the cases will give a false impression of "cured cancer."

Existence of chromosomal alterations or alterations of the distribution of DNA values has been revealed in tumors having a benign histological appearance, but to which the potential of malignant change was attributed. Giant fibroadenoma is one of these tumors.[15]

Other Experience

Our series is too small for us to derive definite conclusions. Therefore, we refer to larger ones, namely that of Treves and Sunderland,[9] who in 1951 published 77 cases from the Memorial Center for Cancer and Allied Diseases, New York, and that of Norris and Taylor,[6] who in 1969 published 94 cases from the Armed Forces Institute of Pathology, in Bethesda, Maryland. Treves classified his cases as benign, borderline, and malignant. His youngest patient was fifteen years of age and his oldest was 72 years af age, the average age being 40.9 years. Surgical procedures consisted of local excision, simple mastectomy, modified radical mastectomy, and radical mastectomy. Complete information about the results was available only for the malignant lesions. Of eighteen malignant cases, eight recurred, four after local excision and three after simple mastectomy.

In the follow-up, 60 cases were living and well from one month to nineteen years following surgery; eight patients died of tumor recurrence or metastases. Of 43 cases in which local excision was performed, the survival up to ten years was higher than that in the other three types of surgery combined. Second in survival were patients treated by simple mastectomy. Comparing survival versus the type of tumor, it was clear that the majority of the patients with benign tumor were living and well after nineteen years. Fewer benign tumors recurred when compared with the malignant ones.

Among 94 patients collected by Norris, the youngest was 15 years old, the oldest 86 years. The average age was 45 years. The tumors were studied on the basis of the size, the margins, the mitotic activity, and the cellular atypism. The treatment consisted of local excision, simple mastectomy, and radical mastectomy. After five years, 67 patients were living and well, 28 had recurrence of the tumor, and 15 patients died of the tumors. A correlation between the characteristics of the tumor and the incidence of recurrent metastases and death was done. Recurrences and deaths were higher when the size of the tumor was larger than four cm, the margins were infiltrating, there were more than three mitoses per high power field, and the grade of cellular atypism was maximal.

Summary

Eleven cases of cystosarcoma phyllodes have been reviewed. One tumor originated in the site of a previously removed fibroadenoma. The oldest patient reported in this series was 90 years of age. A review of the world literature on the subject and an evaluation of larger series published by other authors was made in an effort to derive treatment guides and prognostic criteria.

A warning seems warranted: Keep a watchful eye on all patients in whom a breast fibroadenoma has been removed, since it may recur in the form of cystosarcoma phyllodes.

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* * *

THE CORONARIES WERE BECOME BONY CANALS

My knife struck something so hard and gritty as to notch it. I well remember looking up at the ceiling which was old and crumbling, conceiving that some plaster had fallen down. But on further scrutiny the real cause appeared: the coronaries were become bony canals.

Edward Jenner, writing about his dissection
of a heart from an angina victim.

MEETING THE CHALLENGE OF TODAY'S ADOLESCENT

Graham B. Blaine, Jr., M.D.

Introduction

With the onset of puberty the child begins to become an adult. His body takes on by degrees the shape and form which it will bear throughout the rest of his life, and at the same time his psychological attitude — his values, his opinions, and his style of expressing them — begin to develop and eventually to crystallize and become his distinctive and individual personality. Neither the physical nor the psychological transformation takes place suddenly but rather in a jerky and protracted period of transition. Secondary sex characteristics (pubic hair, breast development, voice change, and beard) may be the first indication that adolescence has begun. On the other hand, these may be delayed, and self-reliance, acceptance of responsibility, and a mature ability to delay gratification may occur while the young man or woman still has the physical appearance of a child.

The characteristic adolescent vacillation between independence and dependence with all its paradoxes and contradictions is probably the characteristic of this age which is the greatest source of concern to parents. Suddenly a child who has been predictable becomes an adolescent who is an enigma. His body may change almost overnight. Arms or legs elongate and seem to be uncontrollable. A slim, energetic girl begins to flesh out and in no time is fat and slothful. A pink-cheeked young boy is one morning covered with pimples. Frustratingly enough, adolescent changes are not unpleasant ones for every growing child. The clumsy, acne-scarred boy sees a number of his contemporaries move from pudgy children to handsome muscular, well-coordinated athletes, and some girls lose their freckles and button noses to become fair- complexioned, handsome young women. Such apparent inequities in manner of change add to the sense of alienation and to the inner hostility and resentment of the teen-ager whose physical attractiveness may be temporarily impaired.

See editorial comments on page 207.

American culture reinforces the natural confusion in the area of independence and dependence by prolonging dependence through long schooling and by inconsistencies regarding the amount of responsibility given to young people at a given moment. The voting and driving ages differ from state to state, and the average parent tends to encourage self-reliance in one area while prohibiting it in another. An eighteen-year-old boy, for example, might be asked to baby-sit for a few days for his ten-year-old sister while his parents are away but not allowed to go on a trip in the family car by himself because he is not "responsible enough to stay out of trouble."

Rebellion

Adolescent rebellion springs from the conflict between independence and dependence, and some manifestation of it appears to be a normal and necessary part of growing up. Sometimes rebellion comes as an overcompensation for nagging feelings of childish dependency of which the adolescent is deeply ashamed. He may strike out in a defiant and exaggeratedly violent way in order to give the impression of a toughness which he does not feel. Another cause of non-conformist behavior is a need to demonstrate courage. The teen-ager has many doubts about his ability to tolerate

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Dr. Blaine was Chief of Psychiatric Service, Harvard University Health Services until November 1971.

Presented at the R.O.Y. Warren Memorial Lectureship at the A. I. DuPont Institute, Wilmington, Delaware on December 2, 1972.

stress and is often reassured and gratified to find that he is able to tolerate criticism and disapproval from those he deeply cares about. He often will go to extraordinary lengths to provoke such a critical reaction, particularly if parents are forcing themselves to be tolerant and permissive in the mistaken belief that this will be reassuring.

Some rebellious behavior can be seen as constructive, a necessary process leading to the eventual attainment of maturity — but such behavior is sometimes destructive in the sense of being permanently damaging or even fatal to the individual or those around him. Constructive forms of rebellion can be seen in young people who adopt unusual styles of dress, enjoy keeping messy rooms, procrastinate in their studies, or fail to do simple household chores. Examples of destructive rebellion are seen in such activities as drunken driving, stealing, taking dangerous drugs, and becoming pregnant. Parents, teachers, and administrators must take major responsibility for helping the young to channel their natural rebelliousness into constructive rather than destructive outlets. This is often a difficult task, for the conscience, developed largely in childhood, serves as an internal gyroscope which keeps the adolescent from moving too far out of line; and when this conscience has developed in a corrupt or inadequate manner, it is often impossible to help an individual gain the necessary degree of self-control. However, for a teen-ager with a healthy conscience, dangerous behavior can be avoided if authorities set guidelines clearly, provide a good example, and are willing to discuss their own values openly and allow them to be challenged verbally without becoming either angry or sullenly silent.

Drug Abuse

Teen-age drug abuse as a form of rebellion deserves special consideration at this time since it has suddenly become so widespread. The fact that drugs are illegal lends just the right amount of danger and gratifying sense of rebellion to make it an ideal way of proving courage and provoking concern from parents and others in authority. In addition, the effect of the drug, whether it be marijuana, alcohol, or heroin, is temporarily pleasing and comforting, except in the case of the stimulants such as "speed" where the satisfying effect is excitement and a false feeling of great energy and competence. When high school students are asked why they take drugs they cite three reasons — boredom, pressure, and family problems — and indeed these are common stresses in today's world. There could be many exciting and challenging projects presented as a substitute for drugs to students to take up their abundant spare time and prevent boredom. Tutoring in ghettos, volunteer work in hospitals, clearing up littered areas, or building recreational facilities for the underprivileged are examples. Few communities make any conscientious effort to involve their young people in such endeavors. The pressure they complain of usually comes from families or schools which may not understand and cater to individual needs but instead urge conformity to the same pattern on all. Unrealistic or inappropriate expectations from school and parents for academic or career achievement lead to feelings of hopelessness and inadequacy in some students which may be temporarily relieved by the abuse of alcohol or other drugs.

Similarly, family problems, by which are meant both friction between child and parents or feelings of being unwanted or uncared about, lead to a psychic pain which becomes so intense that relief may only be found through ingestion or injection of a drug or perhaps through the group acceptance which comes from providing or buying these "goodies."

Sexual Behavior

Another frequent manifestation of rebellion is sexual acting out. This is the gratification of non-sexual desires through sexual activity and involves such acts as making girls pregnant or becoming pregnant out of rebellion or engaging in perverted behavior such as peeping tomism, exhibitionism, or promiscuity, which is caused by the frustration of other emotional needs such as gaining love from parents or appreciation and praise from friends and teachers. While rebellion and the channeling of frustration and feelings of loneliness may account for many unwanted pregnancies, perversions, and promiscuous behavior, it must not be forgotten that the sexual drive *per se* is felt strongly during adolescence—in fact, in many individuals more strongly than at any other period of their lives — and it must find release in some form. Although premarital intercourse is increasingly viewed with a greater degree of equanimity by society today and is certainly more prevalent, still it is not yet considered to be a normal form of sexual activity for the teen-ager by the majority of adult society. There are many reasons — physiological, psychological, and sociological — to continue to believe that total sexual relationships should be limited to marriage, but young people today are challenging that belief in both words and action.

Because of the generally freer and more permissive attitude toward sexual relationships outside of marriage, it is even more important than previously that competent sex education be provided for today's high school student. In order for decisions to be made based on accurate information rather than on myth or street gossip, parents, schools, and churches must cooperate in transmitting the facts about reproduction, venereal disease, how to deal with an unwanted pregnancy, and about contraception to every young man and woman who is facing the problem of reacting in some way to his or her burgeoning sexual feelings. Probably the healthiest outlets for these sexual feelings in the teen-ager are through masturbation, necking, and petting, and yet it is hard for adults to frankly and openly encourage such behavior. Part of a useful sex education program must include discussion of healthy physical ways of expressing affection and relieving sexual tension. Total repression of sexuality is not only impossible for the average teen-ager but also probably unhealthy.

In stressing the importance of education about sex for the adolescent, one must not forget the value of the example set by parents in terms of their relationship with each other and their discussion of the subject as it arises in the context of events in the community as well as in the current literature and the arts. Parental attitudes and values are quickly perceived by their children and though not always agreed with or discussed have an important influence. Appropriate physical expressions of tenderness between a mother and a father do much to help children feel less inhibited and perplexed when it comes to their relationships with others. Similarly, expressions of disapproval and frank discussion of the unfortunate consequences of inappropriate or irresponsible sexual behavior on the part of friends or as portrayed in films or books can encourage healthier attitudes as well as behavior on the part of children.

Identity Formation

Perhaps the most important task of adolescence is the attainment of identity. Professor Erik Erikson, a great scholar in the field of personality development, describes identity as "a feeling of being at home in one's body, a sense of knowing where one is going, and a belief in a religion or a philosophy of life which is deeply meaningful." In order to achieve identity, an adolescent must be free to experiment—to learn for himself what is right for him and to separate his own goals from those that feel superimposed upon him by his parents. In addition, he must have close association with respected elders in order to incorporate into his own identity some characteristics from them which he feels to be admirable. This is not conscious imitation but rather an unconscious internalization of certain traits which eventually become coalesced and solidified into the core of his being. This sense of identity makes him an individual who feels autonomous and separate even though he may be similar in many of his values and ideals to those with whom he has partially identified.

In order to achieve identity some adolescents must suffer through a moratorium period when they feel uncomfortably neutral. They have thrown off the parental standards which feel alien to them but have not yet substituted any of their own. They are against everything and in favor of nothing. As a result, they feel apathetic, depressed, and most uncertain about their future. Some feel compelled during such a period to leave school and to search for meaning and goals in travel or contemplation. Others may choose to work at an unchallenging job or to do a stint of service in the armed forces. Motivation and resolve return after a while and what seemed dull and pointless before takes on meaning and importance once again. Education may now become part of a plan for a life ahead which feels his own, not one conceived of and promoted by others.

For many adolescents the gap between parental expectations and personal ones is filled by the formation of a temporary group identification. Such young people are quickly attracted by fads in dress style or hero worship. They enjoy the security of group non-conformity, and loyalty to a clique becomes very strong. They need the sense of belonging which follows and takes the place of the former family closeness which now feels constricting and alien. Such rejection is upsetting and irritating to parents who see it as ingratitude for all that they have worked so hard to provide. Realizing that it represents a temporary withdrawal and a healthy striving towards gaining independence and eventual individual identity may make it easier to tolerate.

Summary

Parents must realize that when their children become adolescents their needs change. They no longer see their parents as perfect and cannot accept their opinions any longer without questioning them. At the same time in typically adolescent paradoxical fashion they are disappointed if their parents cave in and do not hold firm in their convictions. The teen-ager transmits two contradictory messages, one with his words and the other in his feelings. Verbally he ridicules and fights against almost everything his parents' generation stands for, but emotionally he needs to feel that those in control are consistent, sure of themselves, and courageous enough to stand up for what they believe in. At the same time they do not want those opinions forced upon them. They need to feel that they have freedom of choice.

In general, parents need to allow their adolescents freedom to experiment within the limits of safety, and they must serve as useful identification figures by keeping communication lines open, clarifying their own characters, and setting an example — realizing that even though it may not be obvious, their children have half an eye on them all the time and that what they say and how they behave really make a difference.

The worst slogan for dealing with the adolescent is "Anything worth starting is worth finishing." Perhaps the best is "Parents must learn to tolerate some temporary dislike if they are to gain some permanent respect." The teen-ager is in the process of transition. Parents must keep their faith in him, realizing that he is often suffering along with them but in a different way in his attempt to gain adulthood. His vagaries, his provocative behavior, his arrogance, and his defiance are transient. They must be borne with patience and fortitude.

* * *

Accidents are the major cause of death in preschool children ages one to four, with motor vehicle deaths the major cause . . . deaths from fires and burns rank second.

George M. Wheatley
Past President, American Academy of Pediatrics
Pediatric Annuals, January, 1973

USE OF THE NITROBLUE TETRAZOLIUM TEST TO DETECT INFECTION

The percentage of circulating polymorphonuclear leukocytes reducing nitroblue tetrazolium dye was used to try to differentiate patients with bacterial infections from those with fevers of other etiology. In this series of patients the test gave unreliable predictions in 13% of cases: 4% false negative; 9% false positive.

Janet L. Clark, Ph.D.

Detection of the increased reduction of nitroblue tetrazolium (NBT) by polymorphonuclear cells (PMN) has been proposed as a useful test to differentiate bacterial infection from viral infection and other febrile illnesses.[1-3] Normal polymorphonuclear (PMN) leukocytes which have phagocytized bacteria or bacterial products reduce yellow NBT to blue formazan, which appears as an inclusion in the cytoplasm. Normal individuals will have as many as 10 to 15% cells with these inclusions in their peripheral circulation. Patients with chronic granulomatous disease, lacking the proper enzymes to reduce the dye or kill bacteria, will have no cells with blue inclusions and cannot be stimulated to reduce the dye even when endotoxin is added to the cells *in vitro*.[4] Patients with hypogammaglobulinemia may show no reaction because of poor phagocytosis *in vivo*.[2]

In an attempt to evaluate the usefulness of this test Feigen's group have studied 247 children, aged three months to 15 years, and have prepared a nomogram categorizing each patient on the basis of the percentage and absolute number of positive cells[2] (Figure 1). Group A represents normal controls. Group B includes patients with viral infections, noninfectious febrile illnesses, and treated bacterial infections, all of whom may show some modest increase in percentage and absolute number. Group C, patients with severe, systemic bacterial infections, show an increase in both percentage and absolute number of cells with blue inclusions; these patients include those with such conditions as meningitis, endocarditis, osteomyelitis, peritonitis, and empyema. Group D, with the greatest number of positive cells, represents inadequately treated bacterial infections.

A group of 350 patients were categorized by this scheme on admission and the accuracy of diagnosis determined on discharge after history, physical examination, and laboratory tests were completed.[5] Of those classified as bacterial infections (groups C & D) 67% were shown to have bacterial infections. In addition 5% of those classified as noninfectious or viral infection (A or B) had bacterial infections on further investigation.

A number of investigators have reported similar experiences and have suggested reasons for false positives and false nega-

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Janet L. Clark, Ph.D. is Research Coordinator, Wilmington Medical Center.

tives[1,3,6,7]. Some are easily understood, eg, positive results in infections, due to nonbacterial pathogens such as fungi, yeast, parasites (malaria, trichinosis, amebiasis), *Mycoplasma pneumoniae*, and rarely, viruses. Noninfectious conditions associated with an increased number of positive cells have been reported to include idiopathic myelofirosis, hemophilia, osteogenesis imperfecta, Hodgkin's disease, and the use of oral contraceptives. In addition newborn infants will show active cells in numbers ranging from 20 to 50%.[8,9] One author has reported that when bacterial infection appears in the newborn period the number of positive cells is often reduced to less than 10%.[9]

Percentages of less than 15 are found in documented bacterial infections. In some cases this may be due to the administration of effective antibiotic therapy, unknown to the investigator. Localized infections such as cystitis, streptococcal pharyngitis, brain abscess, primary tuberculosis, osteomyelitis, and infected burns may give positive or negative results. False negative tests may be found in patients with bacterial infection who also have nephrosis, sickle cell disease, lipochrome histiocytosis, alcoholism or leukemia, or those receiving prednisone therapy.[7]

On a more positive note, a number of febrile but non-infectious conditions give normal numbers: rheumatoid arthritis, systemic lupus erythematosis, viral vaccinations. Trauma, surgery, and childbirth appear not to increase PMN activity. Effective antibiotic therapy is reported to revert the NBT test to normal in as little as eight hours in simple infections.[3]

Methods

In an attempt to evaluuate the usefulness of the test 75 adult patients at the Wilmington Medical Center were tested by a modification of Park's technique.[1] Blood was drawn with a heparinized vacutainer tube and processed within one hour. Equal parts of blood and NBT solution were mixed on a siliconized slide and incubated for 30 minutes at 37° C in a moist chamber. Coverslip preparations of the blood were air dried, fixed one minute in absolute methyl alcohol, and stained five minutes in 0.77% safranin followed by several dips in tap water. This stain was chosen rather than Wright's stain because with it the intrinsic polymorphonuclear granules stain red rather than blue and cannot be confused with reduced NBT. Distinct, fine blue granules of reduced NBT as well as large clumps were considered to indicate a positive cell.

Patients evaluated had a history of fever (greater than 38° C in 70%) or a leukocyte count of greater than 12,000 (33% of test group), or were chosen to determine if conditions such as diabetes, uremia, myocardial infarction, cancer, or surgery caused an increase in active cells. Ten patients with a clinical diagnosis of viral infection were also tested.

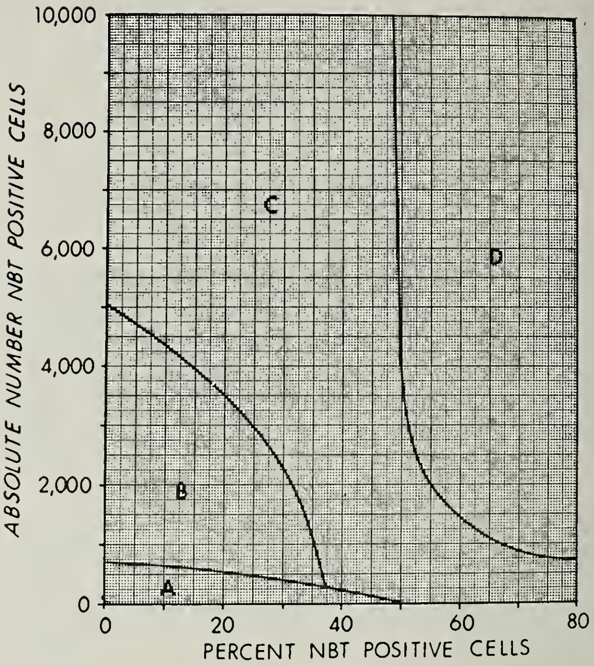

FIGURE 1. Nomogram derived from discriminant analysis of the data. Percentage of NBT-positive cells is plotted on the abscissa and the absolute number of NBT-positive cells on the ordinate. For any given patient, the point of intersection of the two values permits visual categorization of the patient into one of the 4 following groups: group A (control subjects), group B (viral infection, partially treated bacterial infection, and non-infectious febrile illnesses), group C (untreated bacterial infections), or group D (ineffectively treated bacterial infections).

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TABLE I

EVALUATION OF CASES TESTED BY
NITROBLUE TETRAZOLIUM TEST

	NBT < 10%	> 9%	Total Patients
Infections:			
Bacteria cultured			31
Tested before antibiotics	3	11	
Tested after antibiotics	6	11	
Parasite Found:			2
Malaria		1	
Trichinosis		1	
Viral (unconfirmed)	6	4	10
Febrile — no infection found			13
Tested before antibiotics	3	5	
Tested after antibiotics		5	
No fever or symptoms of infection			19
Tested before antibiotics	9	4	
Tested after antibiotics	3	3	
TOTAL PATIENTS	30	45	75

After discharge the charts of these patients were examined to determine the final diagnosis, the results of cultures, the patient's history of fever, and the record of increased leukocyte counts.

Frequent tests of normal laboratory personnel always gave results of less than 10%. Based on this and the results in the literature, greater than 9% was considered to indicate increased activity in the polymorphonuclear cells.

Results

As may be seen in Table I cultures positive for bacteria from various sites were found in 31 patients, and malaria and trichinosis were diagnosed in two patients by blood smear and muscle biopsy respectively. Twenty-four of these 33 patients (73%) had greater than 9% active cells. Three of the untreated patients, classified by the NBT test as without infection, included one with tuberculous pleural effusion, one with sub-acute bacterial endocarditis with a history of symptoms for more than one week, and one with a two-week history of pneumonia whose sputum contained a predominance of *Pseudomonas*. Six other patients with positive cultures but negative NBT tests had received antibiotic therapy for one to five days before being tested. Of the eleven having a positive test in spite of antibiotic therapy, eight had received the therapy for one day or less. The other three had improved on two to four days of therapy though the test was positive.

Ten patients who were febrile but in whom no infecting organisms were found had positive cells indicating infection. Half of these had had antibiotics for more than one day, which may have suppressed the organism without clearing the inflammation. Four of the other five had symptoms of respiratory infection but negative cultures; the fifth had nausea and vomiting after intracranial hemorrhage. Three other febrile patients with respiratory symptoms had fewer than 10% positive cells.

Six of the ten patients with a clinical diagnosis of viral infection had fewer than 10%

active cells as expected. Two of the other four had 10% and 11%, which probably would not often be found in bacterial infections. The other two had 16% and 30% and were diagnosed clinically as viral gastroenteritis.

Seven of 19 patients with no symptoms of infection had positive NBT results (34%). The diagnoses of these patients included sarcoid, (two); kidney disease, (two); cancer, diabetic acidosis, and subarachnoid hemorrhage, one each. Normal NBT results were found in the following conditions: post surgery (three), bleeding (two), cancer (two), one each of uremia, myocardial infarction, pulmonary edema, diabetes, and cirrhosis. Most of these patients had some cultures, but the search for infection was not exhaustive. Seven of the 19 had total leukocyte counts greater than 12,000.

Summary

The technique used in the NBT test is simple but should be controlled by the frequent testing of normals. Use of a stain which does not contain a blue dye such as safranin, avoids the confusion of differentiating toxic granules from deposits of blue NBT dye. The percentage of NBT positive polymorphonuclear cells is the important value since leukopenia or leukocytosis may affect the absolute number.

No attempt has been made here to classify the patients by the Feigen system since a leukocyte count and differential were not done at the same time and because Feigen's nomogram was prepared using only children. Using greater than 9% as indicating bacterial or parasitic infection, 53% (24/45) of those predicted to have infection actually had positive cultures. Another 31% (14/45) had fever and symptoms and may have had bacterial infection unconfirmed by culture, leaving 16% (7/45) to be considered as false positives. Of those patients predicted not to have bacterial infection, 30% (9/30) had bacterial infection by culture, but in six patients the NBT test may have reverted to negative because of adequate antibiotic therapy, leaving a false negative rate of 10% (3/30).

For the most part the NBT results were low in viral infections as expected. The two patients with a significant increase in NBT results had gastroenteritis that was not fully investigated by bacterial and viral cultures, so that no conclusions may be drawn.

In patients with no evidence of infection but positive NBT results, several diagnoses are listed, but multiple problems were present in most cases. A number of patients with each condition, uncomplicated, should be tested by NBT test to determine if a consistent correlation exists. This is especially true in conditions with tissue destruction where the phagocytic system might be stimulated to give consistently high NBT results.

The NBT test is useful in many clinical situations, eg, differentiation of bacterial infections from other febrile illnesses, evaluation of the efficacy of antimicrobial therapy and monitoring patients with increased susceptibility to infection. The failure to find an infecting organism in half of the patients with a positive NBT test, may reflect more the failure or inability to get adequate cultures than on the NBT test. Use of the NBT test as early as possible and definitely before antibiotic therapy will enhance its value.

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The medical errors of one century constitute the popular faith of the next.

Alonzo Clark

THE PEDIATRIC NURSE PRACTITIONER . . . WHO NEEDS HER?

Perhaps no one needs her, but the author maintains that the pediatric nurse practitioner increases the job satisfaction, the ability to serve a larger number of patients, and the income of the pediatrician with whom she works.

R. JAMES MCKAY, M.D.

Let us look initially at the reasons why pediatric nurse practitioners are said to be needed. First is the maldistribution of pediatricians, and second is the shortage of pediatricians. It may be a little bit difficult for physicians in Wilmington to understand that there is either a maldistribution or a shortage of pediatricians, although I suspect that if you were to look at Wilmington's inner city area, and then at its suburban areas, you would find maldistribution, if not an actual shortage.

To take a slightly broader geographic view, Table I shows as an index of the distribution of pediatricians in New England the number of children under 15 years of age per member of the American Academy of Pediatrics in the various New England states. You will see that it ranges from a high of one pediatrician per 3,300 children in Connecticut to a low of one pediatrician per 13,000 in Maine. An interesting point in relation to these figures, and one that signifies a new trend which may affect you here in Delaware eventually, is that I made up a similar table five years ago, in which the ratio of AAP members to children in Connecticut was about the same, but in Maine was 1 to 18,000. At that time in New Hampshire it was 1 to 11,000 and in Vermont 1 to 13,000. In other words, there has been a definite movement of pediatricians into the rural areas of New England, at least, so that these areas are now relatively better off for pediatric care. This has been due in great part to the desire of pediatricians and their families to move away from the various dangers of the city, as well as to enjoy the aesthetic advantages of non-urban life.

See editorial comments on page 205.

Let us try to answer the question: The pediatric nurse practitioner — who needs her? In order to arrive at an answer we need to look at the delivery of pediatric care from the quantitative standpoint. The average total number of health supervision visits and visits for illness care for each child under the care of a pediatrician up to the age of 15 years in one study totaled 65 visits per child. Forty-five of the 65 visits were for illness, and the average number of visits per year was 4.3.

There are approximately 60,000,000 US children under 15, and, interestingly enough, if one looks at current birth rate trends, immigration trends, etc. this is about the number of children to whom we may expect to need to deliver health care each year over the next eight to ten years. If this number of children is multiplied by the annual average number of visits (4.3) per child under the care of a pediatrician, we arrive at a figure of 258,000,000 visits per year of children under

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Dr. McKay is Past President of the American Academy of Pediatrics.

Adapted from a presentation to the Delaware Chapter, American Academy of Pediatrics.

15, if they are to receive what we would term average optimal care. Of course, some children would have more visits and some less depending on their parents' interest or lack of interest in health supervision particularly.

I have estimated the average output of the practicing pediatrician at about 200 visits per week during 46 weeks of work per year. This total may be a little idealistic for many pediatricians since it is based on a month of vacation and two weeks at meetings per year. This works out to 9,200 visits per year per pediatrician.

By 1980, when the financial barrier to the availability of health care will probably be largely removed, we as pediatricians are going to have to deal with 258,000,000 child visits per year. If this number is divided by the number of patients the average busy pediatrician would see in a year, we end up with an estimated need for 28,044 pediatricians.

The currently estimated number of practicing pediatricians is about 11,000. The estimated increment by 1980 is 7,000, for a total of 18,000. But the number of pediatricians which will actually be needed under the present mode of practice is about 28,000, leaving a deficit of 10,000. According to present trends, the number of pediatricians and G.P. equivalents (one G.P. equivalent equals the amount of pediatrics done by G.P.'s, which is equivalent to the work of one pediatrician in full-time practice) is expected to be about 25,800 in 1980, for a deficit of 2,200 pediatricians at that time. If the contribution of general practitioners to the delivery of pediatric care were disregarded, the number of pediatricians, in effect, could be increased by the 35% increase in pediatric productivity which has been shown to occur through the association of a pediatric nurse practitioner with a pediatrician. If each pediatrician were to work with one pediatric nurse practitioner, one could in effect add by 1980 another 6,300 pediatricians, for a total of 24,300, which would leave an overall deficit of only 3,700 pediatricians (Table II). It is thus apparent that if one took the number of pediatricians and G.P. equivalents projected for 1980 (18,000 pediatricians plus 7,800 pediatrician-equivalents among family practitioners doing pediatrics) and were to add the 6,300 possible nurse practitioner equivalents, one would end up with a total of 32,100 pediatricians and pediatrician equivalents, or 4,100 more than the estimated need. There is thus a very real possibility that by 1980 we may end up actually with more pediatricians or, more accurately, providers of pediatric medical services than we will need.

TABLE I

NUMBER OF CHILDREN UNDER 15 PER AAP MEMBER IN NEW ENGLAND

Connecticut	3,300
Maine	13,000
Massachusetts	4,400
New Hampshire	8,000
Rhode Island	5,200
Vermont	6,600

TABLE II

NUMBER OF PEDIATRICIANS NEEDED	28,000
Number of Pediatricians in 1980	18,000
Number of Pediatricians (Represented by 35% Increase in Productivity through Pediatric Nurse Practitioners)	6,300
Total	24,300
Remaining Deficit	3,700

TABLE III

CRITICISM OF PEDIATRIC NURSE PRACTITIONERS

1. Are incompetent vis'-a-vis' doctors
2. Are not acceptable to patients
3. Will deplete supply of nurses
4. Will practice medicine in competition with doctors
5. Will raise practice overhead

Having, hopefully, established the important potential contribution of nurse practitioners to the solution of the pediatric manpower problem, something should be said about criticisms of pediatric nurse practitioners. They are basically five in number. (Table III) First, I would like to say something about items three and four of Table III. From the standpoint of pediatric nurse practitioners depleting the supply of nurses, it is estimated conservatively that there are about 300,000 inactive nurses in the country. Most are married women with children of school age or above, who are not working as nurses. It is this group of people particularly who are being advocated to become pediatric nurse practitioners, and from whose ranks many are currently being recruited.

A second point is that there are a number of women in nursing who are dissatisfied with their professional lives. They want an expanded role in health care which their current and traditional nursing role does not fulfill. As an example of this, I would cite the daughter of a pediatrician friend who is active in the pediatric manpower field but has been strongly opposed to the idea of pediatric nurse practitioners. The last argument I had with my friend occurred on the telephone one Sunday night when he said that the American Academy of Pediatrics was "all wet" in its advocacy of the pediatric nurse practitioner idea. The next Sunday he called back to say that he had to eat his words "about what you said about the current nursing role being unsatisfactory for some people in nursing, because our daughter just came home, having quit her job in a hospital, saying she couldn't stand it and she had to have something that was more challenging or she was going to quit nursing." I think the actual fact of the matter is that the nurses who become nurse practitioners either would not be active in nursing or would quit nursing if this opportunity were not available to them. Therefore, it is extremely doubtful that the nurse practitioner concept constitutes any real threat to the supply of nurses.

The question has been frequently raised as to whether the pediatric nurse practitioner might not consider herself to be in independent practice, in competition with the physician, specifically with the pediatrician. There is no dodging the fact that there are a few nurse practitioners who look at themselves that way. The American Academy of Pediatrics has documented several such cases, but these are only a few instances among the approximately 350 nurse practitioners known to be in the field now. On the contrary, the majority of nurse practitioners feel that the physicians they work with tend to put more responsibility on them, the nurse practitioners, than they wish to assume. It is a relatively rare occurence, in the 1-2% range, that a nurse practitioner wants to set up as an independent practitioner of pediatrics. There is no denying that it does occur, but I would point out to you that we probably have a significantly higher percentage of pediatrically incompetent doctors caring for children right now.

How about the diagnostic competency of pediatric nurse practitioners? An analysis of 278 pediatric *illness* visits, in which a pediatric nurse practitioner's evaluation of the situation was compared with that of an experienced pediatrician, not a house staff member, showed an agreement with the pediatrician's evaluation and proposed management of 86%. Furthermore, there were only two instances in which the management of the child might have been significantly adversely affected by the difference of opinion. It is readily recognizable that it is unlikely that pediatricians among themselves would have any greater degree of agreement.

How about parent acceptance of pediatric nurse practictioners? Here the attitude of the supervising pediatrician appears to be very important. If the pediatrician accepts the nurse practitioner, his patients will also accept the nurse practitioner. Secondly, experience with the pediatric nurse practitioner already shows 70% to 96% acceptance by parents.

TABLE IV

ACCEPTANCE OF PEDIATRIC NURSE PRACTITIONERS

	GOOD	O.K.
Without Prior Use	30%	41%
With Prior Use	53%	43%

(Table IV) Moreover, those surveyed who had had previous experience with a pediatric nurse practitioner were close to unanimous in their acceptance. Thirdly, the current propaganda in the lay literature right now is important in leading to acceptance of the nurse practitioner. The nurse practitioner concept is being widely touted in women's journals, so that mothers are being indoctrinated with the idea, and many are therefore ready not only to accept the nurse practitioner, but even to welcome her. Fourthly, the educational level of the pediatric nurse practitioner seems to be important in her acceptance by parents. The higher the educational level of the nurse practitioner, the greater her acceptance by parents. Lastly, the social level of the parent is a factor which affects parent acceptance, but, interestingly enough, not necessarily predictably. Many parents from higher socio-economic levels, because of their education and greater amount of reading of the material already mentioned, are accepting the nurse practitioner well; others refuse the nurse practitioner because they think it beneath their station to deal with anyone but the doctor. An analogous pattern is seen among parents from the lower socio-economic groups, some of whom are generally resentful of being offered anything which in their eyes is any different from what someone better off is getting. In their minds, when the suburban housewife calls the pediatrician, she gets to speak directly with him and her child is seen immediately by him personally, at home or in his office during an unhurried visit which may last an hour. The less economically fortunate want to have the same thing which they imagine the relatively well-to-do person gets. On the other hand, people of low socio-economic levels may actually prefer to deal with a nurse practitioner because they can understand her better; she will talk to them on a "household" level, which most physicians are unable to do.

What are the effects of the pediatric nurse practitioner on the pediatrician? Perhaps the most important point is that the job satisfaction of the pediatrician increases markedly. Pediatricians who work with nurse practitioners feel that they are providing their patients with better care in a more unhurried manner. Secondly, productivity, as measured by the number of patients seen in an office per unit of time, whether it be per hour, day, week, month or year, has been described by most pediatrician employers of nurse practitioners as rising between 35% and 100%. Thirdly, net income in most such offices has increased between 25 and 50%. The effects of pediatric nurse practitioners on the pediatrician in general have thus been all on the positive side. This is not to say that there are not some pediatricians who find it personally impossible to work with someone else in the office, but pediatricians who have worked with nurse practitioners find it a very satisfying and rewarding experience monetarily as well as intellectually and emotionally.

I might add that during the past year I have gone around the country a good bit and talked with many groups of pediatricians. I have found that I can almost predict what the feelings of doctors about pediatric nurse practitioners are going to be, depending on the environment in which the pediatricians practice. Doctors, including pediatricians, who practice in communities where there are plenty of pediatricians generally do not see any need for nurse practitioners at all and would prefer not to have them. They feel, rightly, that they are delivering very good care to their patients, and they are enjoying doing it. On the other hand, physicians who are working in situations where they are unable to meet the demand which is placed on them for pediatric services are generally very much in favor of having pediatric nurse practitioners. This is particularly true of physicians who have had any experience with pediatric nurse practitioners. To be specific, in Vermont where I live we have 19 pediatricians in practice. Two of them practice with pediatric nurse practitioners. Both took them on with a lot of misgivings, but now it would be impossible to pry their pediatric nurse practitioners away from them. In Denver where the pediatric nurse practitioner concept started and where the suburban areas happen to be among the most heavily populated with pediatricians in the country (at one point in time to the extent that there was talk about there being too many pediatricians in Denver) an increasing number of pediatricians are taking nurse practitioners into their offices with great pleasure. They find that this works out very well for them for these three reasons: increased job satisfaction, increased ability to serve a larger number of patients, and increased income.

In conclusion, the answer to the question "the pediatric nurse practitioner — who needs her?" appears to be "both patients and doctors — and each more than you might think!"

* * *

Editorials

THE NUMBERS GAME IN PEDIATRIC MANPOWER

The numbers game is a fascinating one, and Dr. James McKay's article in this Journal has inspired us to look at our State profile and see how pediatricians are faring in the projected outlook for manpower needs in the coming decade. *The Journal of the American Medical Association* has indicated that Delaware, at this point in time, is well off with pediatric manpower;[1] so has the University of Delaware Technical Services Division and even our own State Medical Society.[2]

Doctor McKay's article begins on page 201.

Well, here goes. Let's examine the data. A survey of the pediatricians in the State of Delaware reveals the following facts:

Present Manpower

A. Number of physicians practicing pediatrics as their major specialty 38
  1. Number of pediatricians qualified by the American Board of Pediatrics and Fellows of American Academy of Pediatrics 24
  2. Non-Board and Non-Fellows 14

B. Number of pediatricians not in active practice 4
  1. Fellows:
    Teaching and administration: Wilmington Medical Center 1
    Administration: Division of Public Health 1
    Administration: Special project and service 1
  2. Non-Fellows:
    Limited activity (no primary care) 1

C. Number of pediatricians delivering primary care 34
  1. Fellows 21
  2. Non-Fellows 13

Ages of Existing Pediatricians Based on Graduation from Medical School

Date of Graduation	Number of Pediatricians	Number Inactive	Number in Practice
1930-1939	6	1	5
1940-1949	8	2	6
1950-1959	17	1	16
1960-1969	7		7
	—	—	—
	38	4	34

Distribution by Counties

	New Castle County	Kent County	Sussex County	Total
Total number pediatricians	28	5	5	38
Number inactive	3	1		4
Number pediatricians in primary care	25	4	5	34

Population by Counties

	New Castle County	Kent County	Sussex County	Total
Estimated total population	386,000	82,000	80,000	548,000
Estimated number children under 15 years	116,000	26,000	23,000	165,000
Number pediatricians in primary care	25	4	5	34
Number children/pediatrician	4,600	6,500	4,600	4,850

Projection of Needs to Maintain Status Quo

A. Status of Current Pediatric Manpower

1. Number of primary care pediatricians with less than 10 years practice remaining	6
2. Number of primary care pediatricians with 10-20 years practice remaining	12
3. Number of primary care pediatricians with over 20 years practice remaining	20
Total	38

B. Anticipated Need for Replacement in Next Decade 6

C. Anticipated Need by Counties

New Castle County	3
Kent County	1
Sussex County	2
Total	6

Based on a national projection,* there will be 60,000,000 children in the U.S. in 1980; assuming one pediatrician for 2000 children, the US will need 28,000 pediatricians in 1980. Here in Delaware we had 34 pediatricians for 165,000 children in 1970,** or only one pediatrician for 5000 children.

The number of children projected for Delaware in 1980 is 150,000** and if the number of pediatricians then is still 34, there will be only one pediatrician for 4500 children.

If the status quo prevails, the following deficit could be expected:

Number of Pediatrician Equivalents Needed in 1980

	New Castle County	Kent County	Sussex County	Total
Population of children under 15	110,000	24,000	22,000	156,000
Number of pediatricians needed	55	12	11	78
Status Quo	25	4	5	34
Deficit	30	8	6	44

These data would indicate that even if we maintain the number of pediatricians giving primary care in our state at the present time, by 1980 we will be short by 130%. Do you believe it? Neither do we! The trends at this time toward more family practitioners, nurse clinicians, and other support personnel will certainly fulfill the need of the major deficit of pediatric manpower during the coming decade. More equitable distribution of pediatricians, the decreasing birthrate, increased knowledge of preventive measures in pediatrics and new methods of health care delivery should enhance the role and effectiveness of each pediatrician, so that doubling our numbers will not be necessary. These factors have been well analyzed in an editorial by Robert J. Haggerty, University of Rochester, Department of Pediatrics, in a recent issue of *Pediatrics.*[3] Let us hope that we have the flexibility, the foresight and the dedication to develop these areas of manpower and health care delivery, so the future will not seem so grim when we are eventually faced with it.

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*McKay

**Population estimate based on statistics compiled by University of Delaware Services and submitted to the Medical Society of Delaware.

M.J.M.

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WHAT IS "RELATING TO YOUTH"?

Because we are a comparatively young nation, much of American culture is focused on the creation of, continuation of, and search for youth. We are dependent on strength, vigor, and a bit of naiveté to ease us over difficult times. As adults living within this culture we spend much of our time trying to be youthful, and if this is no longer possible, we nurture youthful activities so society won't pass us by. The admiration for experience and wisdom in older cultures is comparable to the American epitomization of "the young at heart" and the "feisty oldster."

It is refreshing to read Dr. Blaine's article "Meeting the Challenge of Today's Adolescents" and not see the cliché "relating to youth." It gives a succinct discussion of the psychological maturation from child to adult without once implying the adult must be other than a mature individual to effectively converse with or guide youth.

Doctor Blaine's article begins on page 193.

Many adults shy away from close contact with adolescents because they feel they are not "hip" or "with-it" enough to be respected by the adolescent. However, teens are much more apt to listen to the statement of the adult than to the person who is physically adult but tries to be "part of the gang."

The adult who works with young people needs to be a good listener, to be able to guide without intimidation, and when necessary to be able to disagree with proposed actions not in the youth's best interest. Not every adult is able to work comfortably with every teen, but in general we as physicians can "relate to youth" as adult individuals and can demonstrate by our own actions that being mature, contributing adults is a good goal for youth.

Janet P. Kramer, M.D.

* * *

END OF A "COTTON KANDI CAROUSEL WORLD"

The world (was) (is) a cotton kandi carousel, all the people (were) are the ornaments & and as it floats by, bubbles & bounces, all i can do is watch in amazement, or gaze with a blank look on my countenance & let it all happen—let it whirl, twist or turn, let it spangle & bangle, let each piece take its turn being man, but i cease to be on it for the moment & all i can do is watch it all pass or float by . . . the color of clowns in the circus.

Last entry in the diary of a 19-year-old American girl
who died in Afghanistan after smoking 26 pipes of opium.
New York Times, November 17, 1972

HEALTH LEGISLATION OF INTEREST TO MEDICAL SOCIETY OF DELAWARE

To briefly review, a bill introduced in the General Assembly must pass both houses of the Legislature in the same form before it goes to the Governor for signature.

Most legislation dealing with health and medical care is assigned to either the Senate Committee on Health and Social Services, chaired by Senator David H. Elliott or the House Committee on Health and Social Services, chaired by Representative Andrew G. Knox.

The first session of the 127th General Assembly has completed its work. The following is a listing of some of the legislation with significance for medicine considered in the recent session of the General Assembly. Bills not yet enacted into law will remain alive and carry over to the next session. Allston J. Morris, M.D. is Chairman of the Public Laws Committee, which considers health legislation and makes recommendations to the Board of Trustees of the Medical Society of Delaware. For further information or a copy of any of the bills listed contact the Society office, 658-7596 or 652-6512.

BILL	TITLE — SUBJECT	SOCIETY POSITION	CURRENT STATUS
H.S. 2 for H.B. 6	Relating to Qualifications to Practice Medicine and Surgery (FLEX) (Poulterer)	Supported	Signed by Governor 5/21/73
S.S. 1 for S.B. 7	Removing the Restrictions upon Growth in the Number of Certain Units for Handicapped Children and Providing an Appropriation Therefor (Elliott)	Supported	Passed Senate; has not passed House
S.B. 8	Relating to Children with Learning Disabilities (Elliott)	Supported	Has not passed either house
S.B. 13	Relating to the Operation of a Motor Vehicle while Under the Influence of Intoxicating Liquors or Drugs (Jarvis)	Opposed	Signed by Governor 5/15/73
S.J.R. 16	Providing a Transfer of Authority to Manage and Designate Waters for Shellfish Harvesting from the Dept. of Health and Social Services to the Dept. of Natural Resources and Environmental Control (Isaacs)	Strongly opposed	Passed Senate; has not passed House
H.B. 18	Establishing a Physicians' Assistant Program under the Jurisdiction of the Board of Trustees of the Delaware Institute of Medical Education and Research with Certification by the Medical Council (Riddagh)	Opposed	Has not passed either house
S.S. 1 for S.J.R. 18	Providing for the Creation of a Child Development Council with the Duty of Studying the Feasibility of Establishing an Office of Child Development (Holloway)	No position	Passed Senate; has not passed House

S.C.R. 23	Expressing Opposition to the Proposed Construction of a Nuclear Power Station near Summit Bridge (Isaacs)	Opposed	Has not passed either house
H.B. 43	Amendment to Prohibit or Limit Certain Heavy Industries from Locating in the Coastal Zone Area (Poulterer)	Approved	Has not passed either house
S.B. 51	Relating to the State's Environment and Natural Resources and Providing for a Coastal Zone (Elliott)	Supported	Has not passed either house
H.B. 80	Relating to Blood Alcohol Level at Which Driving or Physical Control of a Motor Vehicle Is Unlawful (.08) (Billingsley)	Supported	Has not passed either house
S.B. 87	Relating to Glass and Safety-Glazed Materials, with Special Reference to the Type of Glass Used in Storm Doors (Cicione)	Did not support	Has not passed either house
H.B. 95	Providing for Health Insurance, Group Health Insurance, Blanket Health Insurance, and Health Service Corporations to Be Subject to Control of Insurance Commissioner (Dillman)	Opposed	Has not passed either house
H.B. 98	Providing for the Licensing and Regulation of Rates of Charge of Hospitals (Dillman)	Opposed	Has not passed either house
S.B. 120	Relating to the Addition of Certain Drugs to the List of Controlled Substances (Methaqualone) (Berndt)	Opposed because it was judged unnecessary	Signed by Governor 5/29/73
H.B. 128	Relating to the Operation and Equipment of Motor Vehicles and Requiring the Use of Seat Belts (Seibel, Dillman)	Did not support	Has not passed either house
S.B. 150	Providing for Lesser Penalties for the Possession or Consumption of Marijuana (Kearns)	Supported	Has not passed either house
H.S. 1 for H.B. 155	Relating to the Regulation of Hearing Aid Dealers (Weiss)	Supported	Passed both houses
S.B. 158	Relating to the Eligibility of Chiropractic Physicians for Compensation from Insurance, Group Hospital Services and Related Plans (Cook)	Opposed	Defeated in the Senate
S.B. 160	Relating to Units of Pupils When the Pupils Are Partially Deaf or Hard of Hearing (Hale)	Opposed	Passed both houses
S.B. 161	Providing for the Education of Pre-School Children Whose Hearing Is Impaired (Hale)	Opposed	Passed both houses
S.S. 1 for S.B. 164	Establishing a Freedom of Information Act, Requiring All Meetings of Public Agencies and All Records of Public Agencies to Be Public and Open to Personal Inspection by Any Citizen of the State of Delaware (Jarvis)	Opposed	Passed Senate; has not passed House
S.B. 195	Relating to Speech Pathologists and Audiologists (Elliott)	Supported	Signed by Governor 7/12/73

BILL	TITLE — SUBJECT	SOCIETY POSITION	CURRENT STATUS
H.B. 208	Relating to Sanatoria, Rest Homes, Nursing Homes, Boarding Homes and Related Institutions (Weiss)	Supported	Signed by Governor 6/26/73
S.S. 1 for S.B. 219	To Regulate Transfer of Oil and Hazardous Substances in or on State Waters and to Create the Delaware Marine and Coastal Resources Protection Fund (Cook)	Supported	Has not passed either house
S.B. 229	Relating to the General Requirements for the Licensing of Psychologists (Manning)	No position	Passed Senate; has not passed House
S.B. 230	Relating to Public Records and Meetings and "the Public's Right to Know" (Elliott)	Support concept but not this bill	Has not passed either house
S.B. 245	Relating to Anatomical Studies and Providing for the Disposition of the Remains of Bodies Which Have Been Donated (Hale)	Opposed bill but not principle	Has not passed either house
H.B. 247	Requiring a Local Referendum before the Fluoridation of a Water Supply (Clendaniel)	Vigorously opposed	Passed House; has not passed Senate
H.B. 251	Relating to Health and Safety and to the Right of an Individual to Die with Dignity (Heckert)	Unable to support because of opposition to efforts to legislate this subject	Has not passed either house
S.B. 262	Providing an Appropriation to the Division of Public Health for Expansion of the Cancer Control Program (Manning)	Supported	Has not passed either house
H.S. 1 for H.B. 269	To Create Bicycle Paths and Bikeways (Worthen)	Supported	Has not passed either house
H.B. 280	Establishing a Penalty for the Manufacture, Delivery or Possession of Certain Drugs Classified under Schedule I and Schedule II of the Uniform Controlled Substances Act (Arnold)	Supported	Signed by Governor 7/3/73
S.B. 285	To Provide for the Implementation of a State Occupational Safety and Health Act (Kearns)	Supported	Has not passed either house
H.B. 290	To Add Chiropractic Services to the Definition of Medical Care for the Indigent (Poulterer)	Opposed	Has not passed either house
H.B. 301	Relating to the Public Health, Safety and Welfare with Particular Reference to Private Child Care Centers (Riddagh)	Vigorously opposed	Has not passed either house
H.B. 315	Relating to Occupational Licenses and Fees (Ambrosino)	Opposed	Has not passed either house
S.B. 320	Relating to Medicine, Surgery, and Osteopathy and Providing for a Delaware Medical Practice Act (Hale)	Supported	Has not passed either house
H.B. 322	Establishing Immunity to Individuals Serving on the Board of Pharmacy and Committees of Pharmaceutical Societies (Weiss)	Supported	Signed by Governor 6/26/73

H.B. 333	Licensing of Drug Abuse Prevention, Control, Treatment and Education Programs (Gilligan/Crow)	Supported	Passed both houses
S.B. 333	Relating to Disclosure of Laboratory Costs on Patients' Bills (Hughes)	Supported	Has not passed either house
H.B. 343	Creating Authority in the Department of Public Safety to Grant Limited Drivers Privileges for Those Convicted for the First Time for Driving under the Influence of Intoxicating Liquor or Drugs (Billingsley)	Supported	Has not passed either house
S.B. 346	Relating to Tests to Determine Blood Alcohol Concentration (Martin)	Supported	Has not passed either house
S.B. 350	Relating to Pharmacies, the Board of Pharmacy, Retail Pharmacies and Other Pharmaceutical Establishments (duPont, Cook)	Supported	Has not passed either house
H.B. 358	Relating to the Control and Abatement of Noise (Knox)	Supported in principle	Has not passed either house
H.B. 373	Establishing a Physician's Assistant Program under the Aegis of the Board of Medical Examiners and the Medical Council of Delaware for the Purpose of Examination, Certification, and Registration of Such Persons (Riddagh, Hale)	Strongly opposed	Has not passed either house
H.B. 409	To Give the Director of the Division of Public Health Authority to Waive the Fluoridation Requirements Where Not Economically Feasible (Heckert)	Supported	Passed House; has not passed Senate
H.B. 425	Relating to the Application of Insecticides, Fungicides, Herbicides and Other Pesticides By Aircraft, Manually, or by Ground Equipment	Supported in principle	Has not passed either house
H.B. 454	Exempting Nurses from Civil Liability in the Rendering of Emergency Care (Clendaniel)	Supported	Passed House; has not passed Senate
H.B. 463	Relating to Suspensions and Revocations of License for Refusal to Submit to Chemical Test (Dillman and Gruwell)	Supported	Has not passed either house
H.B. 466	Relating to the Practice of Optometry (McGinnis)	Supported if desired changes made	Passed House; has not passed Senate
H.B. 470	Relating to Dog Licenses and Veterinarian's Certificate of Current Rabies Immunization (Gordy)	Supported	Passed House; has not passed Senate
H.B. 497	Relating to the Possession of Narcotics and Other Drugs, with Quantities Needed to Create a Reasonable Presumption of Intent to Sell (Orth)	Supported	Has not passed either house
H.B. 498	Providing for a Delaware Health Facilities Authority (Billingsley)	Supported	Passed House; has not passed Senate

Delaware Academy of Family Physicians

THE PRESIDENT'S ADDRESS

In 1947 the medical profession started a headlong rush toward specialization. In a climate that had developed a belief that general practice was dying the AAGP, now the AAFP, was born. The GP had become extremely defensive, for many specialists projected the image that the generalist was inept, unknowledgeable, and unnecessary. This attitude rallied the GP's under the AAGP banner. With foresight, or from the instinct of self-preservation, they stood almost alone in warning the medical profession and the nation of the unfortunate results of disturbing the balance of the kinds of doctors practicing medicine. Despite these warnings, the experiment had to run its course. We feel that it has failed miserably, and the results are almost disastrous; specialists are everywhere, but there are fewer doctors to take care of people.

Our entire profession has reaped the winds of the public's discontent. Organized medicine has been castigated on all sides: from the public, from the columnists and news media, and from the politicians. Our medical leaders have answered with commissions and studies which have come up with the answer that we family physicians already know. We need more "primary" physicians.

Meanwhile, the AAGP moved ahead with innovative educational programs. We were the first and only organization to make continuing education a requirement for membership. We achieved the right to departmental status in hospitals. Our officers served on leading governmental and medical policy-planning commissions. State legislatures acted to assure that medical students would find family practice programs in state-supported schools. Political leaders requested invitations to speak to our conventions for major policy addresses. And we must not overlook Marcus Welby.

It was a long road to establish an American Board of Family Practice, the only board presently requiring recertification. About 4600 physicians have now passed the examination, 12 from Delaware.

Many medical schools have departments or divisions of family practice. Family practice residencies are steadily increasing in number. The Wilmington Medical Center will have four first- and four second-year residents as of July 1, 1973. Greater numbers of medical students are choosing the family practice route.

Well, it seems all's right with the world and the bright future of family practice is assured. We have been saved from extinction, albeit with the help of federal and state government, medical schools which have begun family practice programs, and medical students who have forced some life into those programs. But might not Madame Fate still have some abuse in store for us?

I see a number of clouds on the horizon which I feel may darken our bright future. Four situations, two national and two local, can, I believe, work together to jeopardize our continued hospital privileges. They are Peer Review, the Commission on Hospital Accreditation's directive that all clinical departments delineate the range of clinical privileges granted each member, the apparent rush of the Wilmington Medical Center away from its three component hospitals' former status as community hospitals, and the cry of educators and legislators that Delaware must have a medical school.

Peer Review is visualized as being a review by our local peers, but can you imagine its being allowed to function without federal

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This speech was presented at the Annual Meeting of the Delaware Academy of Family Physicians, April 7, 1973.

guidelines? And isn't it possible that those guidelines might boil down to this: a subspecialist "must" be competent, a specialist is "probably" competent, but a generalist is "incompetent" until proven otherwise and we really don't know how to evaluate his individual performance? Despite definition of privileges by the department of family practice, isn't it possible that other departmental restrictions might exclude us from care of all but the simplest medical problems? As the Wilmington Medical Center becomes more sophisticated, as it trains more and a bigger variety of residents, and especially if it becomes the teaching institution of a medical school, isn't it possible that we might lose our privileges entirely? In our own organization we have several men who speak often and forcefully for us and have done a yeoman's job on our behalf. There are also some men who are specialists and/or in administrative positions who have been steadfast in their support of us—Doctor Rafal, Doctor Rosenblum, Doctor Paulshock, Doctor Cannon, Doctor Martz, and Doctor Lang. We give all of them our hearty thanks.

I also see increased third party payments as a real threat to our status. As with Peer Review, I believe that we may have a problem satisfying the carrier, whether it be private or federal, that our care is competent enough to warrant fair remuneration in comparison with what will be paid without question to the specialist.

And finally, the decreasing number of primary physicians seems to me to be a threat which might well perpetuate itself. Despite the increasing number of family practice residencies, the number of men in primary care decreases at an accelerating pace, and the relative number of primary care residencies, ie, family practice, internal medicine, and pediatrics, decreases. In addition, a larger percentage of these residencies is being filled by foreign medical school graduates, and as the economy of their countries improves, more of them may return to their native countries to practice.

The increasing social consciousness of our young people has given a tremendous impetus to family practice, but will that conscience be dulled when these young physicians run headlong into the problems of restricted privileges and income should the above potential problems become realities? We cannot yet afford the luxury of complacency.

John H. Hanel, M.D.

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WORCESTERSHIRE SAUCE

Renal Damage

Worcestershire sauce can improve the flavor of a good steak; but if taken in excess, it can also lead to kidney damage. Impaired renal function, bilateral calculi and/or aminoachiduria were recently noted in five patients whose taste for the spicy sauce led to excessive intake.[1,2] It may be worth asking patients with unexplained renal impairment or calculi about the condiments they take, for any of the contents of Worcestershire sauce—acetic acid, garlic, black pepper, and other spices—may prove to have a toxic effect on the kidneys.

1. Murphy KJ: Med J Aust 1:1119, 1971.
2. Murphy KJ: Lancet 2:401, 1967.

Book Reviews

TEXTBOOK FOR LABORATORY ASSISTANTS by **Irwin A. Oppenheim, M.D., F.A.C.P., F.A.S.C.P,**, C, V. Mosby Company, St. Louis, Mo., 1972, 149 pp, 79 illustrations. Price $4.90.

The proliferation of new categories of health personnel to be recognized as assistants to the more fully educated associates with whom they work will undoubtedly lead to a rash of books like this one, described by the author as a "compact introductory text appropriate for the high school graduate entering a Certified Laboratory Assistant program." It must be evaluated as a precis, its author's intention, rather than a substitute for the larger texts of laboratory technology. Dr. Oppenheim deserves credit for figuring out what to include in this paperback of but 149 pages, including index. Office assistants involved with the ordering of tests, their reporting, and the chasing down by phone of results gone astray might also find it a useful summary.

Bernadine Z. Paulshock, M.D.

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CHRISTIAAN BARNARD: ONE LIFE, by **C. Barnard** and **C. B. Pepper**, Bantam Books, New York, 1971, 529 pp. Price $1.50 (paperback).

One Life, a highly dramatized autobiography of the cardiac surgeon, Christiaan Barnard, is an interesting wicket through which the reader is introduced to, but not permitted to wander through, the author's psyche. The reader is granted little vignettes of the guilt of a man whose primary love — surgery — obviously deprived him of the essential ingredient for happiness — the ability to make a real love relationship with anyone other than himself. This fault is amply described by the author in his fragile love attachments, the tenuous physical relationship with his parents, and his repeated descriptions of his absence whenever a supposed friend or relative needed him. "Where was I when he needed me most?" is an oft repeated passage in the book. "In the operating room," is the answer implied in the book, but not overtly stated.

Dr. Barnard sees himself as a dedicated surgeon, torn by the fear of inadequacy as a son, father, husband, friend, and surgeon. Despite this insecurity, Dr. Barnard reviews, in a very dramatic and highly novelized style, one medical success after another. In all other areas of activity, the author seems to justify his fears of inadequacy. The book itself is one such example.

Carl I. Glassman, M.D.

* * *

MEDICAL INTERVIEWING by **Robert E. Froelich, M.D.** and **F. Marian Bishop, Ph.D.**, 2nd edition, C. V. Mosby Company, St. Louis, Mo., 1972, 131 pp. Price $5.00.

This little book, now in second edition, is dedicated to the senior author's father whose "fifty-one years of successful general practice were built upon interviewing communication skills." I quite agree that these skills are of fundamental importance in the training of physicians who will be clinicians, and that they are hard to teach. After the very first beginnings they must be learned by practice, and no amount of reading material is apt to help much. But manuals like this are a very good beginning for the preclinical or early clinical student. Half the book is in the format of interview (a marital history, a testing patient, a fearful patient, a manipulative patient) in which the reader is shown the consequences to the interview of various interviewing gambits and responses. There is one delightful cartoon, which looks like it was drawn by Jules Pfeiffer but wasn't, which goes: Patient: I have a pain. M.D.: Where is the pain? Patient: On my side. M.D.: Which side? Patient: Right. M.D.: Does it come and go? Patient: No. M.D.: Does it burn? Patient: Yes. M.D.: How long has it bothered you? Patient: About 15 minutes ago when the grease hit me. M.D.: Why didn't you say that at first? Patient: You didn't ask me. Recommended for students and also for practicing physicians who'd like to check up on their interviewing ability.

Bernadine Z. Paulshock, M.D.

LECTURES ON BIOSTATISTICS by **D. Colquhoun,** Clarendon Press, Oxford, 1971, 425 pp. Price $17.75 cloth, $11.50 paper.

The author stresses statistical reasoning rather than statistical arithmetic and is most successful in this approach. Basic statistics are well described, as well as advanced discussions on the nature of scientific inference and fundamental statistical operations. The variance of observations and their transformations are well explored and are a valuable reference for researchers.

Discrete and continuous distributions are treated in detail. The normal distribution as an approximation to the binomial and Poisson distributions and the interpretation of the central limit theorem are lost as a result of the author's advocacy of non-parametric methodology.

The author does a credible job describing the quite difficult exponential distribution and stochastic processes.

Significance testing and analysis of variance are treated only superficially with a number of omissions: unequal sub-class numbers, split plot designs, and multiple comparison procedures, important to biologists, are not adequately treated.

Linear regression is well treated with only an initial introduction to non-linear regression.

Calibration curves, parallel line assays, and probit analysis are discussed in the last three chapters, and the author successfully bridges the gap between elementary books and Finney's. This reviewer is quite disappointed to find no mention of the non-parametric methods in quantal assays.

Most examples are based on Colquhoun's experience in teaching final year students in pharmacology; the title may thus be somewhat misleading. This book should be of primary value to those researchers and students who have had prior course(s) in basic statistics. The index of symbols, appendices, tables, and guides to significance tests make this book a valuable reference.

Chiao Yeh, Ph.D.

SYNOPSIS OF GYNECOLOGY by **Daniel Winston Beacham, M.D.** and **Woodward Davis Beacham, M.D.,** 8th edition, C. V. Mosby Co., St. Louis, Mo., 1972, 413 pp. Price $10.90.

The subject material is presented in a clear, simple, brief, precise, yet up-to-date manner. Each subject is covered from its basic aspects to more recent concepts and clinical applications. The suggested examinations to accomplish good patient evaluation include tests which are simple, practical, inexpensive, and available to every practicing gynecologist and general practitioner.

The busy practitioner will benefit greatly from this synopsis in keeping abreast of advances in gynecology.

Medical students, and more especially, resident physicians in obstetrics and gynecology would be advised to study in greater depth some of the subjects which are discussed briefly in this synopsis.

A highlight to this reviewer was the last chapter of the book on medico-legal aspects of gynecology. In this era, when malpractice suits have become commonplace, it is of utmost importance that physicians exercise every precaution to protect their colleagues. The best protection comes from the practice of good medicine.

Rosalina L. deJesus, M.D.

* * *

DISEASES OF THE VULVA by **Nikolas A. Janovski, M.D.** and **Charles P. Douglas, M.D.,** Harper & Row, Hagerstown, Md., 1972, 125 pp. Price $17.50 $17.50.

This textbook is an attempt to describe the clinical picture of all the diseases of the vulva along with their biopsy findings, differential diagnosis, and treatment in one hundred and eleven pages. It is a handy textbook because it has collected all the diseases of the vulva in one small volume. However, there are many faults which tend to diminish its value. The one hundred and six black and white illustrations are all reasonably good and show the clinical pictures and the histopathology fairly well. However, the eleven color plates each have between five and ten pictures on each page, which are so small that they really do not add very much except some color to the illustrations.

There are ten pages of bibliography, but the articles in the bibliography are rarely mentioned in the text, so that it is very difficult to utilize the bibliography at all. For instance, in the three pages devoted to lichen sclerosus et atrophicus, there is not one mention of any article that is relevant. However, when one looks in the bibliography, there are a good many references to this disease. Also, in regard to this disease, it is rather strange to see that the first two treatments mentioned are chloroquin in various doses, then vitamin B-6, and then vitamin E. There would certainly be a great difference of opinion as to whether any of these medications are of value in lichen sclerosus, and to discuss the use of chloroquin without mentioning the possible toxic effect on the eyes is evidence of careless writing.

This book cannot be recommended except as a handy summary of all the diseases of the vulva in one volume. The skin diseases of the vulva, their histopathology, and treatment are better described in dermatology texts, and, similarly, the congenital malformations and tumors are better handled in gynecology texts.

LAWRENCE KATZENSTEIN, M.D.

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THE DOCTOR WHO MADE HOUSE CALLS by **Milton R. Bass,** G. P. Putnam's Sons, New York, 1973, 315 pp. Price $6.95.

This is fiction of the first water. It is a story of a physician, who at forty-four is beginning to find that his health is showing the effects of a crowded regime of patients, immorality, and artificial exercise.

The story is fast moving, beginning with the doctor taking his own blood pressure, finding it high, and being too busy to do anything about it. Each scene is meticulously described, such as when the doctor's wife goes "into the bathroom and shuts the door, hikes up her skirt, pulls down her panties, sits down on the john and cries." I suppose this is the attempt to tell it "like it is;" but in this reviewer's opinion, it is ordinary vulgarity.

The doctor's life seems to be equally divided between sexual relations with several patients, worrying about a patient who died during the night at the hospital without anyone officially notifying Dr. Hewitt, his daily consumption of booze, dabbling into narcotics to relieve his tensions, and trying to avoid going to a wake of a fellow physician, who dropped dead while playing handball with him.

Some of the big incidents are his rescue of a car accident victim, the critical illness of his son, and his management of the entertainment of the Country Club.

The author attempts to portray a true medical atmosphere and does it rather well most of the time. Now and then, he makes a boo boo such as, when he says the room was quiet except for the hiss of the oxygen coming through the nasal catheter.

His wife's attempted suicide and his son's near death leave him in a repentant mood as the book ends.

All in all, I would say this is a fast moving novel, very vulgar, perhaps even pornographic, and not very attractive reading for a physician.

F. B. LANE HAINES, M.D.

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MODERN TRENDS IN ENDOCRINOLOGY by **F. T. G. Prunty, M.D.** and **H. Gardiner-Hill, M.D.,** Appleton-Cenutry-Crofts, New York, 1972, 411 pp. Price $33.00.

The book is a review of many of the important current topics in endocrinology. The reader not used to British spelling and terminology will find himself reading about 17-oxosteroids — our 17-ketosteroids — and gonadotrophins — we in the U.S. now mostly spell it gonadotropin. None of the references appear to be more recent than 1970, but the usual lucidity of text written mainly by Britons is a pleasure.

BERNADINE Z. PAULSHOCK, M.D.

President's Page

CHIROPRACTIC — WHAT ELSE?

On July 12 the State Insurance Committee (Insurance Commissioner Robert A. Short, State Treasurer Mary Jornlin, Director of Personnel I. Hammond Cubbage, and Budget Director G. Donald Dryden), met with three members of the Board of Trustees of the Medical Society of Delaware and two members of the Board of Trustees of Blue Cross-Blue Shield of Delaware, Inc.

In the course of the meeting discussion was held concerning S.B. 158 (Relating to the Eligibility of Chiropractic Physicians for Compensation from Insurance, Group Hospital Services, and Related Plans), which was resoundingly defeated, and the impact this would have on the present contract. S.B. 158 would have allowed chiropractors to be paid by Blue Cross-Blue Shield of Delaware, Inc. for services rendered. The feeling was that very little change in the interpretation of the law by the Attorney General and Insurance Commissioner would be made.

Dialogue then centered about including the chiropractic option as a separate one not attached to the medical options already in existence. Blue Cross-Blue Shield of Delaware, Inc. and Medical Society of Delaware representatives were in accord that this could be done. It was determined that very few persons had been approached about the inclusion of chiropractic in the State employees' contract and that the decision to include it as a part of the medical options was made by the Insurance Committee and without consulting any significant number of people. The reason for our objection was obvious in that a majority of persons would be paying for a service neither needed nor wanted.

Blue Cross-Blue Shield of Delaware, Inc. stood ready, they said, to supply figures and data to the Insurance Committee as to the cost of setting up the chiropractic services as a separate option. The Insurance Committee seemed to feel that the administrative cost of such a change after computers had already been programmed with selected options would be prohibitive.

At the conclusion of the meeting Blue Cross-Blue Shield of Delaware, Inc. and the Medical Society of Delaware were agreed that the option of the chiropractic service should be separate from the several medical options, that it should be a voluntary option not paid for by all the State employees whether they wanted it or not. It was an estimate that approximately 150 people out of 19,000 would want the option.

It is the position of the Medical Society of Delaware and of Blue Cross-Blue Shield of Delaware, Inc. that the use of a chiropractor as a primary physician constitutes a threat to the physical well-being of the patient. The diagnostic acumen of these practitioners is lacking in recognizing systemic disease, and valuable time is lost before medical or surgical therapy is instituted.

The Insurance Committee acknowledged that they had not seriously considered the separate option and that they would meet soon again to do so.

A special meeting of the Board of Trustees of the Medical Society of Delaware was called to hear a report of the meeting held with the Insurance Committee. After due consideraton the Board decided not to recommend to its member physicians that they boycott the State employees' group. The intent was to remove any connotation of threat from the deliberations of the Insurance Committee.

On July 13 the Insurance Committee met to consider the questions posed the day before. The Committee decided to leave the contract in its present form for the current year and in March 1974 to take under consideration changing the contract for the final two years of the three-year contract.

The efforts of the Medical Society of Delaware will now be directed toward legislative means to accomplish our goal of protecting the public welfare.

Joseph A. Elliott

In Brief

Speakers on "Ask the Doctor"

Speakers for August, 1973 on the Tuesday radio program (11:05 WDEL) produced by the Medical Society of Delaware are: August 7, Jerome Kay, M.D., *Depression;* August 14, Christopher R. Donoho, M.D., *Hay Fever;* August 21, William A. Taylor, M.D., *Hepatitis;* August 28, Roger Thomas, Jr., M.D., *Cholesterol and Your Health.*

In The News

Mark G. Cohen, M.D., President of the Delaware Heart Association, has announced that newly elected officers of the Association include *E. Wayne Martz, M.D.*, President, and *Jose Pamintuan, M.D.*, Vice-President. *George Henderson, M.D.*, and *Paul Pennock, M.D.*, members of the Delaware Heart Association from New Castle County, have become members of the Association's Board of Directors.

Allen C. Wooden, M.D., has been elected to full membership in the International Society for the History of Medicine. Doctor Wooden has participated in this organization's congresses since 1958. Only thirty other Americans are full members of this prestigious French society.

William J. Holloway, M.D., Director of the Infectious Disease Research Laboratory at the Wilmington Medical Center, will speak at the Wyoming State Medical Society Annual Meeting, August 30, 1973, on the topics, "Antibiotic Selection in the Critically Ill Patient" and "Facts and Falacies Concerning the Newer Antibiotics."

Heart Association Grants

The American Heart Association will award grants-in-aid for one- to three-year research projects in nonprofit institutions. Priority will be given to proposals from talented young investigators or from senior investigators embarking in new directions. The deadline for submitting applications is October 1, 1973. For information and application forms write to the Director of Research, American Heart Association, 44 East 23rd Street, New York, New York, 10010.

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FRANCES B. AERENSON, R.N.

ELECTROLOGIST

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Delaware
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ONCOCYTOMA OF THE PAROTID GLANDS

Case Presentation and Review of the Literature

Oncocytomas are unusual tumors of the parotid gland. A case is presented and the literature reviewed.

A. Hernandez, M.D.
H. S. Rafal, M.D., F.A.C.S.

Ninety percent of all tumors of the salivary glands are located in the parotid gland. Of these tumors, the oncocytoma is extremely rare, especially in the Negro race. For example, in a report of 836 cases of salivary gland tumors Foote and Frazell found only a single case.[1]

In 1958 Chaudhry and Gorlin reviewed the literature and reported a total of 33 cases with only one being Negro.[2] Hamperl in 1962 found 36 cases and added 9 more.[3] Ten more cases were reported by Briggs and Evans in 1964.[4] A total of 15 cases of malignant tumors was reported in the literature by Whitman in 1971.[5]

The diagnosis of oncocytoma can be made only after microscopic examination, as it is extremely difficult to differentiate from other benign and even the malignant tumors of the salivary glands. In general, the lesion is very well encapsulated, firm or cystic and either smooth or nodular to palpation. Normally it is mobile, with no skin or deep structure attachment. The majority of these lesions like almost all the lesions in the parotid gland are located in the superficial lobe. At microscopic examination they are characterized by large cells which have an eosinophilic cytoplasm and a distinct cell membrane. The cells tend to be arranged in narrow rows or cords. Sometimes the cells occur in sheets and may demonstrate an alveolar or lobular pattern. Lymphoid tissue is occasionally present.

In 1897, Schaffer described these cells as "swollen granular cells."[6] Zimmerman in 1927 because of their pyknotic appearance, called these cells pyknocytes.[7] Hamperl in 1931 used the term onkocytes to describe a group of large cells with an oxyphilic cytoplasm.[8] Jaffe in 1932 described a kind of salivary gland tumor with a different histological pattern which he called an oncocytoma.[9] Later the specimen was reclassified as papillary cystic adenoma lymphomatosum.

Oncocytes are normally found in the salivary glands, and the number of cells increase with the years. Also, these cells have been

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Dr. Hernandez is a surgical resident at the Wilmington Medical Center.

Dr. Rafal is a senior member of the Department of Surgery at the Wilmington Medical Center.

described in the hypophysial tissue, parathyroid gland, thyroid, pharynx, trachea, esophagus, stomach, pancreas, liver, testicle, and fallopian tube. The tumor composed of this type of cell has been designated by different names, such as oncocytomas, onchocytomas, oncocytares adenomas, and pyknocytomas. The most descriptive nomenclature was given by Meza-Chavez, who named the tumor oxyphilic granular cell adenoma.[10]

Case Presentation

M.B., a 61-year-old Negro female, was admitted to the Wilmington Medical Center on May 31, 1972, because of a mass in the right side of the face of six months' duration, which had increased in size slowly but progressively. She did not have any other symptoms, such as pain, numbness, etc. At physical examination the patient was in good general condition and the positive findings were limited to the right side of the face, where a "walnut-size" mass was palpated in the area of the parotid gland. The mass was soft, cystic, freely mobile, and non-tender. No involvement of the seventh cranial nerve was noticed. Her routine clinical studies were within normal limits.

On June 2, 1972, a soft mass, measuring 3 cm in diameter, was removed from the superficial lobe of the right parotid gland. The dissection was easy, the mass was removed *in toto*, and the seventh nerve was not disturbed.

The pathology report read as follows:

"Specimen of small nodular structure measuring 3x2.5 cm. On sectioning there was a cystic space filled with brownish fluid, which occupies considerable of its volume. The area measures 2 cm in diameter and has a smooth inner lining. Surrounding this are small, distinct nodules of tissue measuring from 1.0 to 1.5 cm of hemorrhage.

"MICROSCOPIC EXAMINATION: Revealed a well-defined but thin fibrous capsule. The tumor has a uniform, microscopic pattern throughout. It is composed of rather large polyhedral to somewhat columnar shaped cells with abundant pink to red staining cytoplasm and rather uniform oval, vesicular nuclei. The cells are characteristically arranged in thin columns and cords of one to two cells thickness with very thin septa between these columns. There are no mitotic figures.

DIAGNOSIS: Oncocytoma." (Figures 1, 2)

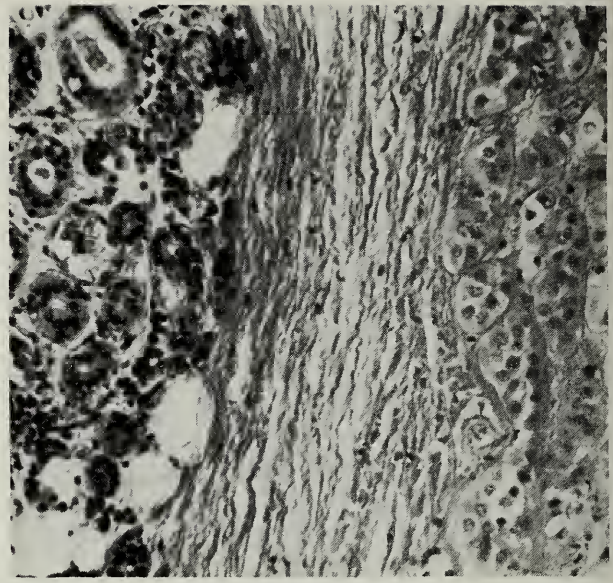

FIGURE 1

Microscopic view of oncocytoma showing large polyhedral to somewhat columnar shaped cells that have abundant pink to red staining cytoplasm.

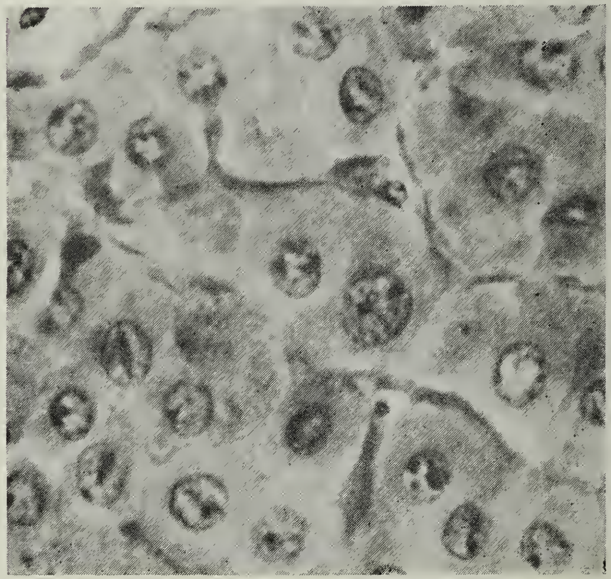

FIGURE 2

Higher magnification which shows the large nuclei and the granular cytoplasm.

Summary

A case presentation as well as a brief review of the literature of oncocytomas is presented. Emphasis is made on the rarity of this tumor, especially in the Negro race. The gross and microscopic characteristics are described.

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* * *

A REVIEW OF PATIENTS WITH CARCINOMA OF THE UTERINE CERVIX

Treated at Kent General Hospital from 1961-1971

The records of 101 patients treated for cancer of the cervix at Kent General Hospital, Dover, Delaware, were reviewed and summarized. Early detection has apparently now become the rule rather than the exception. This is in large part due to the increased use of the "Pap" test as a cytological screening device. A uniform classification system for staging needs to be adopted if long-term survival rates and evaluation of treatment modalities are to be meaningful.

Frank M. Ryan

Cancer of the cervix uteri is one of the most frequent cancers encountered in women, being surpassed only by cancer of the breast. The incidence of cervical carcinoma has been estimated in a study of ten metropolitan areas in the United States to be 44 per 100,000 or approximately 20% of all cancers among women.[1] This means that about 2% of all women will develop cancer of the uterine cervix before the age of 80. While it is difficult to calculate such an incidence for this series at Kent General Hospital without knowing with accuracy the number of women who utilize the hospital's services, it is nevertheless informative to examine the yearly census and a breakdown of these cases into the stages at which they were diagnosed. (Table 1)

Before 1966 an average of 4.8 cases was treated yearly, while since 1966 the average has been 12.8 cases or a two and one-half fold increase. (In the period 1969-1971 the 40 cases of cervical carcinoma were part of 4,833 surgical and gynecological admissions.) One is then left with two possibilities: either cancer of the cervix is becoming more common, which is unlikely, or more women are being screened

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Frank M. Ryan is a member of the 1974 class of the College of Medicine, M. S. Hershey Medical Center, Pennsylvania State University, Hershey, Penna.

TABLE 1

Year	Total Cases	Breakdown by Stages
1961	2	Stage II-2 Other-0
1962	1	Stage I-1 Other-0
1963	6	CIS*-2 Stage II-2 Stage III-2
1964	8	CIS-5 Stage I-3
1965	7	CIS-5 Stage I-1 Stage II-1
1966	11	CIS-7 Stage I-2 Stage IV-2
1967	13	CIS-9 I-1 II-1 IV-2
1968	13	CIS-8 I-1 II-2 III-2
1969	15	CIS-9 I-4 II-1 IV-1
1970	14	CIS-10 Stage I-2 Stage II-2
1971	11	CIS-11 Other-0

*Carcinoma *in situ*, with and without microinvasion.

and detected at an earlier stage. Table 1 bears out the latter assumption. While the numbers for each year are too small to yield statistically significant conclusions, it appears that the number of cases of carcinoma *in situ* and Stage I is proportionally higher; conversely, Stages II, III and IV comprise a proportionally lower number of the cancers.

The reasons for presentation which brought each woman to seek attention show that cytological screening with the Papanicolaou smear is largely responsible for earlier detection and better survival rates. (Table 2)

Nelson and Hall also noted that as cervical screening was extended to all women admitted to Kings County Hospital, the frequency of carcinoma *in situ* increased 250% and the frequency of Stage I 50%.[3] Fulghum in his Florida study noted a 25% decrease in the death rate due to cancer of the uterine cervix between 1952 and 1962, which he attributed largely to the increased use of cytology for screening.[4] Thus, routine Papanicolaou tests have probably been the most important method for allowing earlier detection, thereby reducing the overall morbidity and mortality rate from this disease. A yearly routine Papanicolaou smear is now recommended for all women over 21, and in the sexually active woman under 21. Some feel it is even preferable at six month intervals during the fourth and fifth decades of life.[5]

My original purpose was to try to evaluate to what degree the concept of yearly Papanicolaou smears was practiced by those at risk. I wished to determine if those who subsequently developed cancer of the cervix had had previous Papanicolaou tests. While some of this information was occasionally contained in the hospital charts, too often it was the patient's family physician who had these records. To further complicate matters the interpretations of the slides were not always performed by the same laboratory. I thus abandoned such a far-reaching enterprise as total Papanicolaou smear history for each of the patients in the series as being beyond the limitations of my resources.

The whole concept of etiology is one of the more fascinating aspects of cancer of the cervix. Epidemiological studies have demonstrated that certain groups of women show a statistically significant higher incidence than similar control groups. Certain common characteristics associated with high frequency of carcinoma of the cervix include low income, early marriage and coitus, multiple and often broken marriages, and a positive history of venereal disease. There is a low incidence in nuns and Jewish women and a high incidence in prostitutes, which may indicate some type of relationship to coitus as an etiological factor and perhaps a chemical or viral agent in smegma.

Recent viral studies have shown that herpes

TABLE 2

Number of Cases	Year	Reason for Presentation Vaginal Bleeding*	Papanicolaou Smear	Other
2	1961	1	0	1
1	1962	1	0	0
6	1963	6	0	0
8	1964	3	5	0
7	1965	4	1	2
11	1966	4	3	4
13	1967	6	3	4
13	1968	7	5	1
15	1969	6	9	0
14	1970	2	12	0
11	1971	0	11	0
101		40	49	12

* Vaginal Bleeding includes spotting and post-coital bleeding.

simplex, type II, is closely associated with preinvasive epidermoid carcinoma of the cervix. At present, the evidence available is still insufficient to pinpoint the exact etiologic cause, but a more definite answer seems probable in the near future.[6]

Statistical analyses of data on patients treated at Kent General Hospital reveal the figures to be consistent with national averages and with data reported in other series. The average age of the Kent General patients was 40.9 years (high 83, low 20). The peak incidence nationally for cancer of the cervix is in the fourth decade. Ninety-five percent of the Kent General Hospital patients had been married at one time, which is slightly higher than the national average of 89.7%.[3] Nulliparous women represented seven percent of the Kent General Hospital series, less than the 12% reported by Meigs and Ulfelder.[7] Eighty-three percent of the Kent General Hospital patients were Caucasian, 17% Negro. Twenty of the women were post-menopausal. Eighty-five percent of the patients were Protestant, 14% Catholic, 0% Jewish, and 1% unclassified. These figures are indeed consistent with those in the studies cited above.

The ten cases of carcinoma *in situ* with microinvasion were included with other cases of carcinoma *in situ*. While not all physicians agree that the prognosis is the same for these two lesions, [8,9] there is preliminary data to support this position. [10,11] From reviewing the literature it also seems that the frequency with which one discovers microinvasion is directly proportional to the effort one expends trying to find it. Friedell and associates[12] found microinvasion in only 3.2% of 243 cases, while in Latour's series[13] it represented 50.3% of 274 cases. The solution to this particular contradiction may lie in standardizing definitions and methods of examining the specimens. Ultimate resolution seems necessary if evaluation of the long-term survival figures for various treatment procedures for carcinoma *in situ* is to be meaningful. Similarly the uniform application of a classification system (eg, Table 3) for cervical carcinoma hopefully will allow more accurate staging for this disease and more accurate indices of prognosis.

In 1954 Young stated, "Invasive cancer of the uterine cervix is a preventable disease because most of the etiologic factors can be removed or corrected by better genital hygiene and by treating predisposing cervical abnormalities. The long duration of the preinvasive phase of this malignancy makes it possible to find it by our present methods before it becomes an invasive cancer. This can be accomplished by mass screening or careful evaluation in hospital outpatient departments or in private physicians' offices."[14] While in 1973 the problem is not yet solved, the test of time may prove him correct.

TABLE 3*

Tumor Staging

0:T1	Preinvasive CA, "carcinoma in situ."
I-A:T1a	CA confined to the cervix with minimal stromal invasion only.
I-B:T1a	All other cases with CA confined to cervix.
II-A:T2a	Extending beyond cervix but not into pelvic wall or into lower third of the vagina.
II-B:T2b	As in II-A but also including parametrium.
III:T3	CA extending to pelvic wall and/or lower third of vagina.
IV-A:T4	CA extending beyond the true pelvis or involving the mucosa of the bladder or of the rectum. (M_0)
IV-B:T4	Any tumor with clinical and/or radiographic evidence of metastases outside the pelvis. (M_1)

Additional subdivision to include nodal involvement if possible: N_0 - nodes negative, N_x - nodes inaccessible, N_1 - positive lymphangiogram, N_2, N_3, etc. — ascending degrees of nodal involvement.

* After American Joint Committee for Cancer Staging and End Result Reporting.

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* * *

TRUDEAU AND CHEMOTHERAPY

As soon as I had pure cultures, I began to inoculate rabbits and guinea pigs, and started some experiments to try and kill the germ in their tissues with various germicides, such as creosote, carbolic acid, etc. They all failed, and I found the tubercule bacillus bore cheerfully a degree of medication which proved fatal to its host.

My faith in the possibilities of chemotherapy for tuberculosis is . . . that a chemical compound can be discovered which will kill the germ without injuring the cell — such an agent, when properly used, will prove of great value in the treatment of the disease.

Edward Livingston Trudeau
1848-1915

SOME CLINICAL PROBLEMS ENCOUNTERED IN MEDICAL GENETICS

Advances in medical genetics coupled with an increased general awareness of the role of genetics in relation to disease impose on the physician a need to be prepared to provide counseling and assist in the prevention and detection of genetically transmitted diseases. Some of the more common problems encountered in medical genetics are considered in this essay. Brief reference is made to detection, genetic counseling, and prospects for the future.

William G. Slate, M.B., Ch.B., M.S.

More than one hundred years ago the Austrian monk, Gregor Johann Mendel, made experimental crossings between various forms of peas. The term "genetics" and the word "gene" did not exist. Around the turn of the century it was recognized that chromosomes represented the material basis of heredity. What Mendel[1] had called "material characters" became known as "genes." Garrod applied Mendelian principles in his work on the transmission of alkaptonuria and was able to explain both the familial incidence and the frequency of parental consanguinity; consequently he established that such familial cases were instances of recessive inheritance.[2] This recognition of the inborn errors of metabolism by Garrod was the first step toward present-day studies of enzyme systems at the cellular level. In 1944, Avery, MacLeod and McCarty demonstrated from studies of the inheritance of capsular polysaccharides in pneumococci that DNA was the carrier of specific genetic information.[3] Muller demonstrated that ionizing radiations could cause somatic mutation.[4] It was not until 1956 that the true number of human chromosomes was established to be 46 and not 48. The first known chromosomal anomaly in man was described by Lejeune, Gautier and Turpin in 1959 — trisomy 21, responsible for Down's syndrome (mongolism).[5]

Medical genetics deals not only with heredity but with diseases which may be attributed to environmental factors. Gordon found it convenient to consider the etiologic classification of diseases as a continuous spectrum with "heredity" at one end and "environment" at the other.[6] In most instances, the location of the disease on the spectrum is based on personal impression rather than on data.

Genetic counseling is most concerned with those diseases at the hereditary end, and with the multifactorial diseases in the center. Little information can be offered about diseases which are predominantly the result of environmental influences.

Hereditary conditions are rare, with frequencies of less than 1 in 1000 live births. A few exceptions that are encountered more frequently include sickle cell anemia, glucose-6-phosphate dehydrogenase deficiency, and hemolytic disease of the newborn associated with Rhesus blood group incompatibility. McKusick has catalogued these Mendelian conditions.[7] Of the 1545 entities recorded by him, the genetic pattern has been well established in 692.

Dr. Slate is Director, Department of Obstetrics and Gynecology, Wilmington Medical Center and Professor of Obstetrics and Gynecology, Thomas Jefferson University.

This article is based on Dr. Slate's presentation at the University of Delaware conference on "Current Medical Challenges: Drugs, Genetics."

The origin of genetic disease may relate to chromosomal number and is caused by nondisjunction in some instances, and/or it may relate to the constitution and quality of genetic material. In a defective gene there is an alteration in the DNA molecule, which is composed of a long sequence of four "base residues" — adenine, guanine, cytosine and thymine. The order and position of these nucleotides are believed to comprise the genetic "code" which determines the sequence of amino-acid residues in proteins synthesized by the body's cells. Thus, an alteration in the DNA molecule will result in the production of altered proteins. There is reason to believe that many such abnormalities occur without impairment of the protein's ability to perform its metabolic function, but the problem becomes apparent when the chemical anomaly causes a functional abnormality.

Clinical Problems

In this essay only brief mention will be made to some of the clinical problems encountered in medical genetics.

1. Developmental Abnormalities:

Prospective parents are frequently concerned about the possibility of birth defects. Developmental abnormalities which can be attributed to errors of chromosome number occur in approximately 1 in 200 live-born infants.[8]

2. Down's Syndrome (Mongolism):

This is one of the more frequent disorders caused by a chromosome abnormality and occurs about once in 650 births. The general frequency increases with maternal age, particularly after the age of 35. Only 13 percent of all pregnancies occur in women over 35, but more than 50% of mongoloids are born to these women.[9] It usually is associated with trisomy 21 and a total chromosome number of 47, and is the result of nondisjunction. With the development of quinacrine fluorescence microscopy, the identification of chromosomes has become more precise. This led to the discovery that an error was made in chromosome assignment and that the involved chromosome is actually No. 22 and not 21. Nevertheless, at the International Convention of Genetics in Paris in September 1971 it was decided to continue No. 21 as the Down's syndrome chromosome. Translocation varieties of this disorder are less common, have 46 chromosomes, and are born of younger mothers in a familial pattern. Men with this translocation appear to produce affected children rarely. Maternal karyotyping is particularly important, as it appears that a woman with such a translocation has a risk of one in three of having a child with Down's syndrome. Translocation is the factor responsible for the increased risk of Down's syndrome recurring during a subsequent pregnancy in the same individual.

3. Abnormalities Involving X and Y Chromosomes:

Abnormalities of X chromosomes may arise in either spermatozoa or ova, but Y abnormalities arise only in sperm. A wide variation of sex chromosome number is compatible with life as long as one X chromosome is present.[10] Apparently normal individuals may have abnormal karyotypes involving X and Y chromosomes. Mosaicism further complicates the picture.

4. Chromosome Errors in Men with Antisocial Behavior:

Men with Klinefelter's Syndrome and XYY chromosome pattern have been implicated with antisocial behavior. However, the experience of Baker and his associates revealed no significant difference in the sex chromosome errors between penal and non-penal populations when subjects of all heights and all chromosomal categories were compared."

5. Subfertility and Infertility:

Fetal wastage and subfertility may be explained by sex chromosome anomalies. Hsu has recommended that couples with a history of subfertility and/or multiple spontaneous abortions should be studied cytogenetically not only to detect balanced structural abnormality, but also to search for chromosomal mosaicism.[12] This applies even though the woman is phenotypically normal and has no irregularity of menses.

Women with primary amenorrhea, particularly if Caucasian and less than five feet tall, may have a sex chromosome abnormality of the Turner type although no other stigmata of Turner's syndrome are demonstrable.

6. Chromosomal Abnormalities Following Conception After Oral Contraceptives:

It is well known that there is a high percentage of chromosomal abnormality among spontaneous abortions,[13] whereas this is an infrequent finding in induced abortion (2%).

Carr has reported a significant increase in triploidy in abortuses from women who conceived within six months of discontinuing oral contraceptives compared to a control series.[14] The chromosome disorders compatible with live birth (trisomy and X-monosomy) were not increased in the post-oral-contraceptive abortuses. He has suggested that a temporary hormonal imbalance could affect the timing of fertilization and that triploidy could arise at the first or second meiotic division of the ovum or at fertilization.

When conception occurs within six months after discontinuing oral contraception and the pregnancy is not terminated by spontaneous or induced abortion, amniocentesis and chromosomal analysis may be indicated around 14 weeks after conception (ie, 16 weeks of amenorrhea). Chromosomal studies of the newborn might also be indicated in such cases.

7. Cancer:

The possibility that cancer is a genetic disease has been suggested. Usually the host's tissue karyotypes are unchanged, and the current consensus seems to be that karyotype abnormality is secondary to the malignancy rather than its cause.

8. S Hemoglobinopathy:

Screening of populations at risk is being recommended for an increasing number of genetically-transmitted disorders. An example is S hemoglobinopathy, which is an autosomal recessive disease. The need to identify individuals with S hemoglobin has been emphasized recently. The heterozygous combinations of hemoglobin S with hemoglobin A, sickle cell trait, is important in situations involving oxygen deprivation and in pregnancy.[15,16] Around 6 to 8% of Black Americans have S hemoglobin.[16,17]

An increased incidence of urinary tract infection has been noted during pregnancy,[18,19] and the birth weight of babies born to mothers with sickle cell trait is significantly lower than those born to non-affected mothers.[20] Patients with the homozygous form, sickle cell disease (SS), have an increased incidence of toxemic and infectious complications of pregnancy. Perinatal mortality and maternal morbidity and mortality are increased so that termination of pregnancy should be considered and surgical sterilization is recommended.[15]

9. Glucose - 6 - phosphate dehydrogenase (G-6-PD):

Deficiency of G-6-PD is an X-linked autosomal recessive disease, the heterozygote manifestation being decreased red cell enzyme activity, affecting the first part of the oxidative pathway of carbohydrate metabolism. The defect was first noted in Black individuals who had hemolytic reactions from treatment with primaquine, an antimalarial. Many other drugs also cause this reaction (eg, sulfa drugs and nitrofuran derivatives). Six percent of Black American males screened by Rosner et al had G-6-PD deficiency.[17] Therefore, it should be considered as a possible cause when hemolytic anemia is encountered in Black males. When this defect occurs in the Caucasian, it tends to manifest with greater severity.

10. Phenylketonuria (PKU):

Phenylketonuria is a rare condition which is autosomally recessive and expressed in homozygous individuals. For every one person who has PKU, 198 are carriers and 9801 will have no genes for PKU.

The child with phenylketonuria lacks the enzyme phenylalanine hydroxylase and cannot metabolise the amino acid phenylalanine in a normal way. The resulting accumulation of phenylalanine and other abnormal metabolic breakdown products in the blood rapidly leads to development of irreversible brain damage and serious mental retardation. PKU can be treated by a special diet low in phenylalanine. This reduces or eliminates brain damage and permits normal mental development. Effective management requires early diagnosis and prompt treatment.

Because of its rarity, detection is costly, but the care and hospitalization of patients with mental retardation from undetected PKU are even greater.

A new problem is arising. Successfully treated girls with phenylketonuria are reaching the age of motherhood.[21] These girls will, of course, continue to transmit PKU, but they also continue to accumulate phenylketones. Placental transmission of these phenylketones and their effect on the mental development of the fetus *in utero* need further investigation. Even if the offspring escapes inheriting the disease, it may be damaged by the abnormal products of maternal metabolism during pregnancy. These girls should be traced or redetected so that they may be treated with a low phenylalanine diet during pregnancy, and also perhaps whenever conception might occur. Mothers with PKU may have normal children. It is not known whether or not proper dietary treatment of a woman with PKU will prevent maldevelopment of the fetus.

Fisch suggests that, when an infant has suffered intrauterine growth retardation, mental retardation, microcephaly, or other congenital malformation, the mother may have PKU although apparently normal physically and mentally.[22] A search should be made for maternal subclinical PKU whenever an infant is born with congenital abnormalities.

11. Consanguinity:

Parent-child and sibling matings are almost universally regarded as incestuous. In the United States laws prohibit marriage of a person with his or her parent, grandparent, child, or grandchild. In Georgia a man is not prohibited from marrying his daughter or grandmother. The uncle-niece marriage is also not prohibited in Georgia as well as among Jews in Rhode Island.[23]

The question of first-cousin marriages is one of medical advisability rather than one of legality. It is generally thought that the marriage of individuals less closely related than second cousin has little practical chance of increasing the risk of occurrence of recessive diseases in their offspring.[24] Because most undesirable traits are relatively rare in any given population, the first-cousin marriage with no history of hereditary defect only increases the likelihood of expression from very rare (eg, 1 in 15,000) to relatively rare (eg, 1 in 3,000).

Mortality among children of consanguinous marriages is two to three times greater if the parents are first cousins than when marriages are of unrelated individuals.[6] The risk of birth defects is increased, whereas fertility in marriages of close relatives is reduced. Additionally the person who is known to be homozygous may voluntarily not reproduce because of the serious nature of the hereditary condition. Thus, the cumulative result may be a decline in the frequency of a specific gene in a given population. On the other hand, the possibility exists that an outstanding desirable trait will be perpetuated in descendants of close-relative marriages.

Detection of Chromosomal Aberrations and Inborn Errors of Metabolism

Genetic studies have been enhanced by newly-developed techniques used in identification and classification of chromosomes and by the application of computers in the generation of karyograms. Y chromosomes can be identified in interphase nuclei by using fluorescent microscopy.[25] The accuracy of chromosomal identification and grouping is also facilitated by this technique.

Intrauterine detection of genetic disorders is a subject of increasing importance. Amniotic fluid samples can provide cells for cytologic and cytogenetic study and allow determination of some of the inborn errors of metabolism on the basis of enzyme activity in the amniotic fluid or cells.

Amniocentesis is commonly employed in the management of erythroblastosis and in the determination of fetal distress or maturity. The risk of complication is less than 1% when performed after the 20th week of gestation. There is little risk to mother and fetus when performed early in the second trimester of pregnancy. Milunksy notes that the most useful time for amniocentesis for chromosomal study is between 14 and 16 weeks of gestation (dated from last menstruation) and indicates the possibility of causing abortion is about 2%.[26]

In relation to genetic problems the current indications for amniocentesis are cytogenetic study, X-linked genetic disorders, and inborn metabolic errors.

Nadler notes that successful chromosomal analysis of cultivated amniotic fluid cells can be achieved in 99% of specimens.[27] The objectives of these studies are early detection and proper timing of appropriate treatment.

Recurrence Risks of Congenital Anomalies

Parents of a child afflicted by a congenital anomaly are naturally concerned about recurrence risks. When there is uncertainty about application of genetic theory, predictions must be based on prior experience and observation. The risk of recurrence of a congenital anomaly is known to be increased when a parent or previous child has had the anomaly. For example, in the case of cleft-lip, with or without cleft palate, as well as individuals who have cleft palate without cleft-lip, the effect is cumulative.[6,24] Major anomalies of the central nervous system are ten times more likely to occur after a couple has had one affected child. In the latter case it should be emphasized that the risk remains relatively low, being 1:20 or 5%.[6]

Genetic Counseling

An immediate demand for an explanation occurs when a physician is confronted by conditions such as a newborn with an obvious anomaly or ambiguous genitals and an abortus which does not contain a fetus. Less obvious changes, traits and carrier states may remain undetected, but a sophisticated and concerned generation is now asking questions and seeking assistance. There is growing interest in prevention. A genetic component is being recognized in an increasing number of conditions. Genetic counseling consists not only of statistics, tables, graphs and formulas, but also touches sensitive personal and family cords. Attitudes and motivation deserve careful consideration. Kindness and diplomacy are needed to avoid antagonism and blame. After birth of an affected child each side of the family may accuse the other for the "hereditary taint," thus leading to serious marital rifts and disruption. Guilt feelings may result from self-medication during pregnancy, or the defect be attributed to sexual indiscretions. Emotional problems can often be relieved by explanation and legitimate reassurance. Frequently the chance of producing another defective child is less than was feared. The ability to provide errorless counseling requires an accurate diagnosis and the use of authoritative sources regarding inheritance, penetrance, and expressivity. It is unrealistic to expect that every physician should be able to carry out all of his own genetic counseling. The rapid proliferation of reports, identification of "new" conditions, and accumulation of new data make this impossible. As long as there is an awareness of the indications for genetic counseling, the assistance of a counselor can be invoked when a problem arises.

What of the Future?

Most genetic diseases are refractory to current therapeutic approaches. There are few treatments currently available for dominantly inherited conditions. At present the only therapeutic approach to chromosomal disorders is by prevention through prenatal detection. Nevertheless, an air of optimism is permissible. A few genetic diseases can be substantially corrected, if not cured, and a considerable number are being tackled by promising, though still experimental, methods.

Howell states that "at least partial correction of many recessively inherited metabolic disorders is now possible. . . . While therapeutic nihilism need no longer prevail with regard to such conditions, prevention is still to be preferred and remains the only present approach to the important chromosomal disorders and to practically all dominantly inherited diseases."[28]

Prevention (and in selective instances, termination) of pregnancy, artificial insemination, and adoption are therefore the available alternatives.

The effectiveness of genetic counseling, contraception and prenatal detection in preventing or controlling genetic disease and the role of selective termination of pregnancy, genetic manipulation, and engineering, must await the test of time and new technology.

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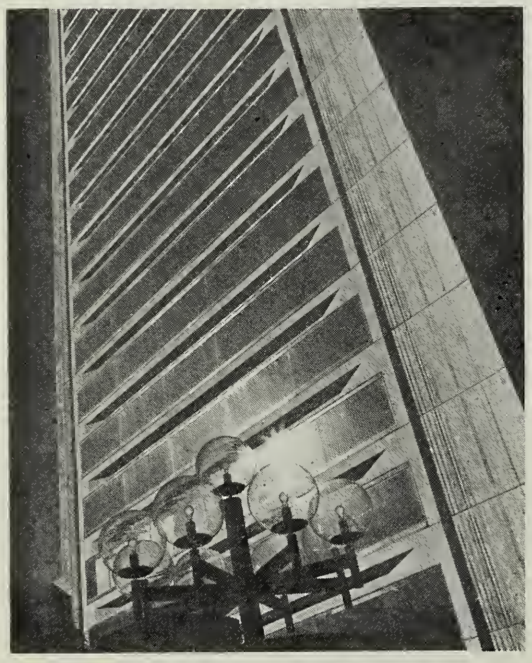

Pei Building, Wilmington, photographed by Stuart W. Rose, M.D. Nikon, 28mm red filter (R 10), Panatomic X.

See "In Brief" for information regarding the Physicians' Photography Exhibit to be held in conjunction with the 184th Annual Meeting of the Medical Society of Delaware.

CHP, HPC, DHSA, ADH

STIRRING THE ALPHABET SOUP

Clifford T. Foster

CHP	Comprehensive Health Planning
HPC	Health Planning Council
DHSA	Delaware Health Services Authority
ADH	Association of Delaware Hospitals

The practicing physician longing for a simplistic approach to the practice of medicine finds himself at a loss to understand the proliferation of governmental agencies, each having a part to play in the health delivery system. This article is an attempt to place each of the organizations in its proper perspective and ascertain its role and how the organizations relate to each other, and, most importantly, how they relate to the physician.

Public Law 92-603, or the Social Security Act, enacted October 30, 1972, places much emphasis on the importance of CHP, or Comprehensive Health Planning, so I will give this effort top billing.

Comprehensive Health Planning (CHP) is divided into two sections that deal with physicians, the "A" and "B" agencies. The "A" agency, funded with 50 percent State and 50 percent Federal funds, is housed in the State Government in the Division of Planning, Evaluation, and Research, under the Department of Health and Social Services. The Executive Director is Harry Camper and the Governor's Advisory Council, which directs the operation of the "A" agency, is chaired by Dean Mary Carl. The agency is charged to develop a Comprehensive Health Plan for the State. The Medical Society of Delaware, through its members on the Council, has been most active in developing this Plan. Governor Tribbitt has accepted the Plan, with its recommendations, and hopefully will provide the necessary legislative impetus to meet the goals as stipulated by the priorities.

Section 1122 of P.L. 92-603 provides for the Secretary of Health, Education and Welfare to reduce certain Federal reimbursement under Title V (Maternal and Child Health), Title XVIII (Medicare), and Title XIX (Medicaid), whenever he determines, based on the recommendation of a designated planning agency in the State, that a health care facility or HMO fails to notify the appropriate State-designated planning agency of a proposed capital expenditure of $100,000 or a substantial change in service or change in bed capacity. The Governor has designated CHP as that planning agency to implement this section of the law.

The Comprehensive Health Planning Council has gathered additional momentum by the implementation of the Division of Planning, Evaluation, and Research and is now in a position to provide leadership in all phases of health planning.

The "B" agency, or Health Planning Council (HPC), funded with 50 percent Federal and 50 percent local matching funds, has been actively engaged in planning since 1966, and was assisted in its birth by the Medical Society of Delaware. Through cooperation of the health facilities of the State and Blue

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Mr. Foster is Executive Director of the Health Planning Council.

Cross and Blue Shield of Delaware, Inc., the "B" agency has been involved for a number of years in performing the duties of review and comment now mandated by P.L. 92-603. The "B" agency will now be an arm of the "A" agency in carrying out the mandate at the local level. The Board of Directors of the Health Planning Council must by law be 50 percent consumer-oriented, with provider and governmental groups duly represented. Dr. John M. Clark is the President of the Board, and C. T. Foster is the Executive Director. The Health Planning Council's area of control is New Castle County by mandate, but by contract they plan for facilities for the rest of the State. They will conduct the first review on the $100,000 capital expansion and change of services or beds and will forward their comments to the "A" agency for decision making. Needless to say, the "A" and "B" agencies form the basis of a frontal attack within the State on all health planning of facilities, manpower, and services and have a substantial representation of providers, including physicians and dentists.

The Association of Delaware Hospitals (ADH) is about the best known of all the agencies in this article. Started many years ago, it has just recently moved its offices to 5 Reed Street, Dover, Delaware. The President is Robert Sweeney, Administrator of A. I. duPont Institute, and the Executive Director is Jack Cross. The Association deals in education, legislation, and public relations and serves as a common meeting ground for all voluntary hospitals of the State and the V.A. Hospital.

The Delaware Health Services Authority, Inc. (DHSA) is the infant of the group and is progressing nicely under the able leadership of President Rhoslyn Bishoff, M.D. and Executive Director Perry Scheinok, Ph.D. They are finishing their first year contract and are expecting funding for a second year. The direction of the Authority is presently being studied by a committee to ascertain its role in the health care delivery system of the State. Originally the concept of the Authority was to indicate priorities by gathering supportive data throughout the State, thereby channeling Federal health dollars into those projects that had received a high priority. This is a contract between the Authority and the Federal Government and is an experimental program, with maximum Federal support for two years.

As a part of the Authority's program, a separate contract was awarded to the Urban Affairs Division of the University of Delaware to conduct an in-depth health survey of 3,000 homes, involving all three counties and the City of Wilmington. The results of this survey are being awaited anxiously as there could be a wealth of vital information that could be used in planning for the health care of the State.

How does the physician make sense out of all of this? Well, let me attempt to place each organization in its proper place in the framework of the health delivery system.

Comprehensive Health Planning "A", with the assistance of the "B" agency, the Health Planning Council, has developed a comprehensive plan for the State. The first part was delivered to the Governor's Office in 1972 and contained a wealth of information on the manpower needed to deliver care. The projection of physician manpower was chaired by Robert Frelick, M.D. Recommendations were a part of the report dealing with educational programs needed to supply the projected need of the many areas of health manpower.

The second part of the plan, Program and Priorities, has been finished and was presented to the Governor's Office this month. The "B" agency will accept the reports and will plan to implement the recommendations by working with consumers and providers of health care for their area of control and assist the "A" agency in the overall implementation for the entire State.

The Delaware Health Services Authority will be in a position to support the plans by coordinating in a single place all of the State's supportive health data, which is now spread all over the State. They will also, as stipulated in their contract, provide leadership and management competence to implement and evaluate the effect of innovative plans and programs in improving distribution of care, moderating costs, and maintaining quality of care. They will in effect establish the leadership ability to direct and manage a total health service delivery system for the State.

All other organizations of the State, namely, the State and County Medical Societies, the Osteopathic Society, DIMER, the Association of Delaware Hospitals, Delaware Nursing Association, Practical Nurse Association, Delaware Nursing Home Association, Pharmaceutical Association, Dental Society, and all allied health groups will supply the hands, arms, eyes, and brains to complete the job. Although this group appears last in this dissertation, they are by far the most important. Planning, managing, and implementation are nothing but words if the provider does not provide.

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Letters to the Editor

To the Editor:

I believe that the information presented and the conclusions reached in the editorial, "What Price a Nuclear Reactor for Delaware," (*Delaware Medical Journal*, June 1973) do not reflect an objective and fair assessment of the energy situation today as it relates to the role of nuclear power for the future.

The standard of living that we enjoy in this country is closely linked to our consumption of all forms of energy, especially electric energy. The rate of growth of all forms of energy usage is increasing faster than the increase of our population, especially in that energy used to generate electricity. To be specific, the rate that fuel is used for electric power generation increased from 5¾% per year in the 5-year period 1960-1965 to 8½% per year in the 1965-1969 period and to over 9% in 1970. It is expected that the rate of growth of electrical usage will continue to increase faster than the rate of growth of other primary energy uses. This will occur despite the contribution that each of us can and should make to use our energy resources most effectively and eliminate wasteful energy applications.

As the primary supplier of electrical energy to the Delmarva Peninsula, we have a responsibility for planning and meeting future needs for electricity. In planning the additions to our generating capacity for the 1980's, we are faced with an important fact: we must use the energy resources and the related energy technology which is available today. Despite the appeal of much publicized methods of electrical generation, such as solar power, tidal power, the fuel cell, and the thermonuclear fusion, it is important to realize that these options pose serious technological problems which are still unresolved. Even if all or some of these more appealing methods of electrical generation should be proven in the near future, it would still be some time before they could make a significant contribution to our country's energy base.

The development of additional electrical generating capacity during this decade will require the use of three primary fuels — coal, oil, and uranium. Until recently coal was the primary fuel of our industry. Our collective environmental desires and regulations have changed the use of this fuel. We can extract the particulate matter after we burn coal, but at present there is no proven and reliable way of removing the sulfur oxide gases from the coal burning process. Technology to solve this problem is being developed, but it's not yet ready for application on a large power station. When such technology is proven, we are hopeful that the vast coal reserves in this country can again be utilized. In place of coal, utilities have become increasingly dependent upon oil, especially low sulfur oil. Our Edgemoor Generating Station, for example, switched from using 1% sulfur content oil to oil having a sulfur content of only ½ of 1%.

This brings us to uranium and nuclear power. In our opinion, this method of electrical generation has presented itself at a most opportune time and offers us the opportunity to become less dependent on fossil fuels and the related combustion process. Nuclear power has been proven to be compatible with our environmental objectives. It has proven to be an economical source of base load generation. It has proven to be safe. Yet, despite the contribution that nuclear power is now making (there are 30 commercial nuclear power stations in operation in this country today) and can make in the future, there is a lack of acceptance of nuclear technology by some. In my opinion, this lack of acceptance results from misinformation about the state of the nuclear art, and, in some cases, reflects concerns which are more imagined than real. Such a concern relating to radioactive fission products is reflected in your June editorial.

Your editorialist arrived at the overall conclusion that radiation from nuclear plants poses a threat to the environment and the natural food chain of plants and animals. There is no basis for postulating such a claim. In making such an assumption it is clear that the author did not put radiation exposure in a realistic perspective. This is clearly a case where the benefit associated with the use of such technology clearly outweighs the risk. One of our employees who is working on our nuclear project recently advised me that he received from a series of routine medical chest x-rays over one hundred times the radiation exposure that he would receive in one year if he were standing on the boundary of our proposed nuclear power station. To further put radiation in perspective, consider the following average individual dosage levels that we receive from background radiation each year:

Cosmic rays	35 millirems
Ground	11 millirems
Buildings	34 millirems
Air	5 millirems
Food	25 millirems

Consider also the average individual exposure from the following man-made radiation sources each year:

Coast-to-Coast Jet Flight	4 millirems
Medical Exposure	35 millirems
Fallout	2 millirems
Nuclear Power Plant	.001 Millirem
Color Television	1 millirem

There is risk to everything we do, including nuclear power. The preponderance of study related to the nuclear program and the state of the nuclear art have clearly minimized the risks to the point that they are acceptable.

The station that we propose to construct south of the C and D Canal is designed to operate without causing thermal pollution in the Canal. To do this, the station incorporates cooling towers to dissipate the heat into the air. There will be some water returned to the Canal, but it will cause a rise in the water temperature of less than ½ of one degree, and this will only occur within a small mixing zone. To put it another way, the use of cooling towers will reduce the amount of warm water returned to the Canal to an insignificant amount. This would occur even if the generating plant were fueled with coal or oil.

Despite the controversy surrounding this aspect of nuclear power, the risks from transporting and reprocessing radioactive waste are minimal. Under Atomic Energy Commission regulations, the waste from our facility will be thermally cool and solidified before shipment to one of the AEC's reprocessing centers. The shipping containers are specially designed to withstand the rigors of shipment. In the highly unlikely event of a breach in the shipping container, there would be no liquid or gases to be released because of the solid form. The overall operation of the plant will be subject to extensive environmental monitoring, both by us and by the Atomic Energy Commission. This is a further indication of the stringent criteria which are applicable to the operation of such a facility.

Commenting on the overall safety of commercial nuclear reactors, the Atomic Energy Commission recently said, "The record of safe operation of nuclear reactors is an excellent one. There have been no radiation accidents in civilian nuclear plants which have injured members of the public."

This is a complex subject and meaningful conclusions cannot be reached without an understanding of some basic facts.

Edward F. Spear
Vice President, Delmarva Power

* * *

Editorials

GIVE THOSE SHOTS!

There is a moral dilemma regarding compulsory immunization of children prior to entry to school. In a review of the United States, Puerto Rico, and the Virgin Islands in 1970, 31 states had laws requiring immunization for a specific disease or diseases prior to school entry, and five states had legislation pending.[1] The majority of these laws related to smallpox vaccination (27 states). In the fall of 1971, the United States Public Health Service (USPHS) and the American Academy of Pediatrics (AAP) announced that smallpox vaccination was contraindicated except in a small, select group of people. The states with laws requiring vaccination prior to school entry had a long and difficult battle to get these requirements erased from their books, and many children suffered the consequences by being barred from school until they could present appropriate documentation of having been vaccinated, hardly an auspicious beginning to their school experience.

Here in Delaware, we are fortunate in having a more flexible law. The power to require immunization of children prior to school entry is vested in the office of the Director of the Division of Public Health. Thus he can decide what immunization should be required, year by year; indeed his decision can be changed at any moment, depending on current recommendations of the USPHS, the AAP, or other policy-making organization.

This year, for the first time, the Division of Public Health in conjunction with the State Department of Public Instruction has decided to utilize this power, and has issued a directive that all children entering public schools are required to have documentation that certain immunizations have been received, are being given, or have been waived for religious or medical reasons.

The moral issue rests in whether children who do not present appropriate documentation the first day of school should be sent home. In our opinion, they should not. However, this is where the Division of Public Health can really put its clout. It can now readily identify those children in need of immunizations. Using intensive follow-up by Public Health Nurses, they should seek permission of delinquent parents to immunize their children.

In light of current recommendations of those knowledgeable about children "out of step" with immunizations, only three visits to the school nurse, health clinic, or private physician are required to complete their basic immunizations.[2] At the first visit, tetanus-diphtheria (Td), oral poliovirus vaccine (OPV), and tuberculin test are given. At the second visit, eight weeks later, Td, OPV, and combined measles and rubella (which may include mumps) vaccine are administered. One year later, immunization is completed when booster Td and OPV vaccines are given.

Delaware, the first state, should become the leader once again in getting and maintaining a high level of immunization in our school children. We have not been successful in the past,[3] but now we have the tools and the leadership to reach this goal. So, let's do it! Give those shots!

M.J.M.

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* * *

DIABETES: THEN AND NOW

Diabetes mellitus is an ancient disease. The oldest medical writings mention the presence of sweet urine accompanying a fatal wasting. Insulin, discovered fifty years ago, was the first therapy which could save the lives of severe diabetics. Before insulin, the only available means of treatment was diet therapy, which was successful for but a few. Very soon after the discovery of insulin, the initial chorus of gratitude of the saved became accompanied by the plaints of those who felt condemned to daily or more than once daily insulin injections. So in addition to the development of long-acting insulin, the search for an "oral insulin" went on, culminating about twenty years ago in the development of the oral hypoglycemics, serendipitously discovered during chemotherapy research when it was noted that some of the sulfa drugs being tested caused hypoglycemia.

Several other factors became important in the management of diabetes at this time. With the development of tests for blood sugar and ready tests for urine, it was realized for the first time that diabetes, like most clinical diseases, is an iceberg; a small portion of those affected are serious enough to be obvious, and the others range from moderately severe, through mild, to just barely abnormal. And along with the development of agents for the treatment of the serious cases and the recognition of those who are less diabetic, it became apparent that dietary regulation was sufficient treatment for many diabetics.

Two other observations lent importance and stature to the therapeutic entity of diet. One was the discovery that diabetes is really two diseases. There are the juvenile diabetic, who has essentially no endogenous insulin and therefore cannot be expected to be treated by diet alone, and the adult diabetic, who still makes insulin. The other important discovery was that diabetes is not merely a disease of increased blood sugar; it involves abnormalities of fat and protein metabolism. The side effects of diabetes result in all the usual degenerative diseases of aging occurring at an earlier age; control of the blood sugar level and blood fat by diet seems to be the best preventive measure against these complications.

On the other hand, despite the knowledge that diet alone will normalize the blood sugar levels of many adult diabetics, and that weight loss may make their diabetes essentially disappear, freedom to eat is an unmentioned but really terribly well accepted personal freedom. Throughout the world the first step an undeveloped country makes towards prosperity is making available more food than is necessary merely to survive. So that even though doctors and patients realized the possibility of controlling diabetes by diet alone, the availability of oral hypoglycemics led each to hope that by taking these medications, patients could eat more and still stay in acceptable control. The pendulum for diet therapy of diabetes as the primary treatment has now not only swung back to center, but it has swung violently, knocking over a host of persons on its way.

One more thing of utmost importance but still unachieved is an orderly answer to the question *when* is diabetes. A young pregnant woman has glucosuria and an elevated blood sugar, but she has normal glucose tolerance after delivery; is she diabetic? Should she do anything different from her neighbor? A forty-year-old man with post-prandial glucosuria and a blood sugar of 190 has normal blood sugars when he loses 50 pounds unless he eats two pieces of lemon meringue pie and his blood sample is taken precisely one hour and a half after the last bite; is he diabetic? Suppose he loses twelve more pounds and now even lemon pie doesn't change his blood sugar? Is he still diabetic? What about abnormalities of glucose intolerance by normal standards in completely asymptomatic elderly persons?

Recently, Dr. Robert Bradley, medical director of the Joslin Clinic, told a Senate committee considering two bills to support diabetes research and education, "As many as half the yearly cardiovascular disease deaths in the United States are at least in part produced or hastened by the presence of undetected diabetes mellitus." Really? Another witness told the committee that, "If the previous estimate of 10 million diabetics in the United States is correct, then there may be 7½ million unknown, undetected diabetics," which would bring the total to almost 20 million or almost 10% of the US population, men, women, and children.

In my opinion, we must redefine our normals. As physicians, we must put our efforts where they can do the most good; the most good is not frightening people with a label of "diabetes," which has been established by finding levels of blood sugar 5 mg over the levels established for healthy medical students. We must return to an emphasis of proper diet (which we should never have left), including a continued crusade against Madison Avenue: milk instead of milkshakes, apples instead of potato chips.

B.Z.P.

* * *

A FEW THOUGHTS ON THE RETIRING DOCTOR

What should the senior doctor be doing as his years advance? It is the belief of this writer that he should be enthusiastically planning for a second career, as so well expressed by Wilder Penfield in his essay on "The Second Career."* He should not be doing more and more, taking on new responsibilities and giving no thought to his retirement. Who is to tell him he is growing old and not what he used to be, and it is time to ease off work or stop? Maybe his family have already reminded him. If he is well and strong, he is probably not thinking of retirement. Years should never be the determining factor for retirement for some are more capable of continuing work at 70 than others at 60. The balance must be found between the chronological and physiological ages in making a decision on the time of retirement. One of the greatest mistakes industry is making today is retiring senior executives by the calendar, ie, a statutory retirement, even though many of these with great experience and know-how are just as sharp mentally and in as good health as they have ever been. Every company should have a special retirement board, perhaps of their own retirees, which board with the best medical advice available should decide on the time of retirement for each top executive, when he reaches a certain age. Let the young, bright executive coming up the ladder compete with the older one. Economically, a company would oftentimes be better to continue and hold on to top brains than to try new ones in responsible positions.

The man in medicine, however, is different from the man in business and in industry, for few have to completely retire if they wish to continue in some capacity. There is always medical work for a physician to do. As the writer views the situation of the older physicians, they fall into the following four categories:

1. Those who have always had leanings to do other things in addition to medicine and cannot wait to stop and get out, and particularly those with well-developed avocations and hobbies. Perhaps for these, retirement should be between 60 and 65.

2. Those who have always planned to travel and write but have never had the proper amount of time to spend because of the demands of work and practice, and also perhaps teaching. These should not wait too long to retire. Perhaps 65 to 70 is an appropriate age.

This editorial originally appeared in the *Virginia Medical Monthly*, October, 1972, and is reprinted in a slightly abbreviated form with their kind permission.

*Wilder Penfield "The Second Career," Boston-Toronto, Little, Brown and Company, 1963.

3. Those who have always enjoyed practice and have accumulated an estate sufficient for an adequate retirement income but definitely still are thinking only of today and not of tomorrow. These are the ones who are going to have to be reminded that they will not live forever and start thinking about retirement.

4. Those who have so many financial obligations they must continue to work for ends to meet. This is a very unfortunate group, who have a difficult problem to solve. These are the ones who may "die in harness."

If you are over 65, what class do you come in? I hope not the fourth. The writer was a delegate to the 1971 White House Conference on the Aging, which was by far and above the most structured national conference he has ever attended. However, there was no section to bring together the physicians where they could discuss their special problems. The AMA has had a very active Committee on Aging for many years, but the concerns of this Committee, to my knowledge, have seldom been involved with the problems of the retirement of physicians. Perhaps every state, county, or city medical society should have a small committee of "looked up to" and greatly respected members (perhaps those who have already retired) who on request would discuss retirement with their older members. With so much emphasis now on the delivery of health care and peer reviews, perhaps this might be another way of showing those of the public who are so critical of the physicians and the practice of medicine we are doing another something to insure the best possible medical care. Each one of us, I am sure, has different ideas on the subject and the first immediate objection might be, "I do not want anyone telling me what to do and when I should quit. I know myself." But the unfortunate part is that many of the older physicians, in the judgment of others, do not know when it is time to stop. This editorial is an appeal to the senior physician still working to stop and think about his second career before it is too late.

Alfred R. Shands, Jr., M.D.

4868 UNSOLICITED PAGES

I fancy myself a fast reader and I enjoy reading, but the volume of reading matter which presents itself to me monthly is enough to discourage even the greediest "readaholic." During one recent month, I kept track of all the unsolicited magazines and newspapers which were delivered to me, including in the tally only that material neither subscribed to nor requested by me. The total number of different publications was 51. Four of them were new the month I kept the resumé; the total number (some are weekly or biweekly) was 62. The total number of pages of all this material was 4868.

Incredible? The difficult thing is that many of these throw-away journals are excellent. Many of the authors are the same who write in the non-throw-away medical journals, but frequently their style in the free ones is more lucid, their material less esoteric.

How is the conscientious physician to deal with this flood of paper? Can he even expect to scan it and still read some of the numerous medical journals in his hospital library or to which he subscribes, not to mention the daily or weekly papers and magazines which are also essential to a balanced reading diet?

I have no solution to suggest. A year or two ago I tried to get my name removed from one of the throw-aways (stow-aways, their editors prefer to call them). The editor of the mag in question wrote back an understanding letter, the gist of which was that it was not possible to get into their mailing list to delete one name. The AMA will, upon your request, delete your name from the list it provides (sells?) to throw-away journals from which they choose their addresses by location, age, specialty, etc. But then you won't get any of these types of mailing unless perhaps you specifically request a particular journal by addressing it directly. If, however, you don't read any of the throw-aways and they are thrown out as soon as they arrive by the secretary who opens your mail, then it would be a more ecologically sound course to follow to get your name off the master mailing list entirely. And kinder to your mail man.

B.Z.P.

President's Page

PSRO

Professional Standards Review Organizations are now mandated by federal law. Essentially the law requires that the PSRO determine for Medicare and Medicaid patients (1) whether in-patient hospital care is indicated or whether equally good care could be provided on a less costly out-patient basis, (2) whether that care is of high standard, and (3) whether care is transferred as soon as possible to an appropriate lower cost level, such as home or nursing home.

The Medical Society of Delaware's Board of Trustees has elected to cooperate in order to ensure effective functioning in accordance with federal mandate, but under local physician direction. HEW guidelines require that the group designated as the PSRO agent be composed of at least three hundred practicing physicians in the area, that there be required neither payment of dues nor membership in any organized medical society, and that use be made of existing peer review bodies.

The Board of Trustees of the Medical Society of Delaware believes that the Delaware Foundation for Medical Care fulfills all these requirements. Elsewhere in this issue of the *Delaware Medical Journal* the official by-laws of the Foundation are published for your study.

The Foundation will not only fulfill the requirements of a PSRO, but by combining the PSRO function with the pilot project for coordinated medical care through private doctors' offices, we will gain valuable experience which will help to ease the transition before the federally mandated date of July 1, 1974 for beginning compulsory operation.

The current Foundation proposal (recently mailed to you) does not change the relationship of the physician to his patient or to Blue Shield or other third parties. Each patient participating in the project will continue to have free choice of physician.

The Medicaid and Blue Shield groups selected for participation in this pilot project will have comprehensive benefits. The Foundation plan keeps this unchanged and adds to it comprehensive coordinated peer review, one of the functions mandated by PSRO. The specifics of the Foundation proposal provide that existing hospital utilization review committees will continue to do the major part of in-hospital peer review with the Foundation serving as coordinator.

While the Foundation will be committed to the concept of administering PSRO, the pilot project is an experiment, the continuation of which will stand or fall on its own merits as the membership in the Foundation may determine from time to time. Moreover, while membership in the Foundation for all physicians who participate in Medicare or Medicaid would be necessary in order to satisfy PSRO requirements, participation in the pilot project is optional.

In order to obtain federal recognition as a PSRO agency for the state of Delaware, it is necessary that it demonstrate a potential membership of at least 300. You will shortly be canvassed and asked to respond to two questions: (1) Will you become a member of the Foundation? and further, (2) Will you participate in the pilot project?

Joseph A. Elliott

DELAWARE FOUNDATION FOR MEDICAL CARE

BY-LAWS

ARTICLE I

MEMBERSHIP

Section 1

CATEGORIES OF MEMBERSHIP

There shall be two categories of membership as follows:

(a) Participating Physicians, who shall be those M.D.'s and D.O.'s who have contracted with the corporation for a period of at least one year to participate in any of its medical care programs.

(b) Enrolled Consumers, who shall be those consumers who have enrolled in any medical care program sponsored by the corporation.

Section 2

ELIGIBILITY AND MAINTENANCE OF MEMBERSHIP

(a) Participating Physicians — Any M.D. or D.O. licensed to practice medicine in the State of Delaware may contract with the corporation to participate in any of the medical care programs of the corporation.

(b) Enrolled Consumers — Any person may participate as an enrolled consumer by enrolling in any medical care program sponsored by the corporation.

Section 3

DUES

Dues for participating physicians and for enrolled consumers may be assessed at the discretion of, and in such amounts, as may from time to time be determined by the Board of Directors, subject to the approval of the Board of Trustees of the Medical Society of Delaware.

ARTICLE II

MEETINGS

Section 1

ANNUAL MEETING

An annual meeting of the members for the transaction of such business as may properly come before the meeting shall be held at such place and at such time as the Board of Directors shall each year fix.

Section 2

SPECIAL MEETINGS

Special meetings of the members, for any purpose or purposes prescribed in the notice of the meeting, may be called by the Board of Directors or the president of the corporation and shall be held at such place, on such date and at such time as they or he shall fix.

Section 3

RECORD DATE

The Board of Directors may fix a record date, which shall not be more than sixty nor less than ten days before the date of any meeting of the members. If no record date is so fixed, the record date for determining members entitled to notice of or to vote at a meeting of members shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held, and the record date for determining members entitled to express consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first written consent is expressed. Those persons, and only those persons, who are members on the record date shall be entitled to notice of or to vote at any meeting of members or any adjournment thereof, or to express consent to corporate action in writing without a meeting.

Section 4

NOTICE OF MEETINGS

Written notice of the place, date, and time of all meetings of the members shall be given, not less than ten nor more than fifty days before the date on which the meeting is to be held, to each member entitled to vote at such meeting, except as otherwise provided herein or required by law (meaning, here and hereinafter, as required from time to time by the General Corporation Law of the State of Delaware or the Certificate of Incorporation).

When a meeting is adjourned to another place, date, or time, written notice need not be given of the adjourned meeting if the place, date, and time thereof are announced at the meeting at which the adjournment is taken; provided, however, that if the date of any adjourned meeting is more than thirty days after the date for which the meeting was originally noticed, or if a new record date is fixed for the adjourned meeting, written notice of the place, date, and time of the adjourned meeting shall be given in conformity herewith. At any adjourned meeting, any business may be transacted which might have been transacted at the original meeting.

Section 5

QUORUM

At any meeting of the members, twenty percent (20%) of all of the members entitled to vote at the meeting, present in person or by proxy, shall constitute a quorum for all purposes, unless or except to the extent that the presence of a larger number may be required by law.

If a quorum shall fail to attend any meeting, the chairman of the meeting or the majority of the members entitled to vote who are present, in person or by proxy, may adjourn the meeting to another place, date, or time.

If a notice of any adjourned special meeting of members is sent to all members entitled to vote thereat, stating that it will be held with those present constituting a quorum, then except as otherwise required by law, those present at such adjourned meeting shall constitute a quorum, and all matters shall be determined by a majority of the votes cast at such meeting.

Section 6

ORGANIZATION

The president shall call to order any meeting of the members and act as chairman of the meeting. In the absence of the president, such person as the Board of Directors may have designated or, in the absence of such person, the highest ranking officer of the corporation who is present shall call to order the meeting of the members and act as chairman of the meeting.

The secretary shall act as secretary of the meeting. In the absence of the secretary, the secretary of the meeting shall be such person as the chairman of the meeting appoints.

Section 7

CONDUCT OF BUSINESS

The chairman of any meeting of members shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of discussion as seem to him in order.

Section 8

PROXIES AND VOTING

At any meeting of the members, every member entitled to vote may vote in person or by proxy authorized by an instrument in writing filed in accordance with the procedure established for the meeting.

Each member shall have one vote.

All voting, excepting where otherwise required by law, may be a voice vote; provided, however, that upon demand therefor by a member entitled to vote or his proxy, a ballot vote shall be taken. Each ballot shall state the name of the member or proxy voting and such other information as may be required under the procedure established for the meeting. Every vote taken by ballots shall be counted by an inspector or inspectors appointed by the chairman of the meeting.

All elections shall be determined by a plurality of the votes cast, and, except as otherwise required by law, all other matters shall be determined by a majority of the votes cast.

Section 9

MEMBERSHIP LIST

A complete list of all participating physician members entitled to vote at any meeting of the members, arranged in alphabetical order and showing the address of each such member, shall be open to the examination of any such member, for any purpose germane to the meeting, during ordinary business hours for a period of at least ten (10) days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or if not so specified, at the place where the meeting is to be held.

The membership list shall also be kept at the place of the meeting during the whole time thereof and shall be open to the examination of any such member who is present. This list shall presumptively determine the identity of members entitled to vote at the meeting.

ARTICLE III

BOARD OF DIRECTORS

Section 1

CATEGORIES AND NUMBERS OF DIRECTORS

The Board of Directors shall consist of 18 members, who are participating physicians of whom at least 3 shall be osteopathic physicians. All Directors shall have identical rights, powers, and duties.

Section 2

APPOINTMENT AND ELECTION

The members of the Board of Directors who are participating physicians shall be appointed by the

Board of Trustees of the Medical Society of Delaware. If the office of any Director who is a participating physician becomes vacant by reason of death, resignation, disqualification, removal, or other cause, the Board of Trustees of the Medical Society of Delaware shall appoint a successor for the unexpired term and until his successor is appointed and qualified.

Section 3

TERM: INITIAL DIRECTORS

Each member of the Board of Directors other than the initial directors shall serve a term of 3 years. The initial members of the Board of Directors shall serve as follows: 6 directors shall be designated to serve for one year, at least 1 of whom shall be a participating osteopathic physician; 6 directors shall be designated to serve for 2 years, at least 1 of whom shall be a participating osteopathic physician; and 6 trustees shall be designated to serve for 3 years, at least 1 of whom shall be a participating osteopathic physician. The initial members of the Board of Directors shall be named by the incorporator, except that to the extent that there are not available participating physicians to be named, such lesser numbers of directors as shall be named by the incorporator may function as the Board of Directors until the remaining directors are duly appointed or elected. Each year thereafter, the offices of the directors whose terms expire that year, shall be filled as provided herein, such that the participating physician directors can be succeeded only by participating physicians, with at least 1 osteopathic physician being appointed each year.

No director may serve more than 2 successive terms on the Board of Directors, except that a participating physician may be permitted to serve not more than 3 successive terms with the express approval of 2/3 of the Board of Trustees of the Medical Society of Delaware.

Section 4

REGULAR MEETINGS

Regular meetings of the Board of Directors shall be held at such place or places, on such date or dates and at such time or times as shall have been established by the Board of Directors and publicized among all directors. Notice of each regular meeting shall be given to each director by whom it is not waived, by sending by first class mail written notice, not less than seven days before the meeting, or by telephoning or telegraphing the same not less than three days prior to the meeting, and such notice shall, in addition to the time and the place, state the purpose of the meeting and include the agenda items to be discussed.

Section 5

SPECIAL MEETINGS

Special meetings of the Board of Directors may be called by the president or the secretary of the corporation or by any three directors and shall be held at such place, on such date and at such time as he or they shall fix. Notice of the place, date, time and purpose of each such special meeting shall be given each director by whom it is not waived by mailing written notice not less than three days before the meeting or by telephoning or telegraphing the same not less than eighteen hours before the meeting. The special meeting shall be limited to the items of business for which the meeting was specifically called.

Section 6

WAIVER OF NOTICE

Special meetings may be held at any time without notice if all the directors are present, or at any other time if those directors absent sign a written waiver of notice of the meeting.

Section 7

QUORUM

At any meeting of the Board of Directors, a majority of the total number of the whole board shall constitute a quorum for all purposes. If a quorum shall fail to attend any meeting, a majority of those present may adjourn the meeting to another place, date, or time, without further notice or waiver thereof.

Section 8

PARTICIPATION IN MEETINGS BY CONFERENCE TELEPHONE

Members of the Board of Directors, or of any committee thereof, may participate in a meeting of such board or committee by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and such participation shall constitute presence in person at such meeting.

Section 9

ACTION WITHOUT A MEETING

Any action required or permitted at a meeting of the Board of Directors may be taken without a meeting, so long as all Directors shall sign in writing a consent to the action so taken.

Section 10

CONDUCT OF BUSINESS

At any meeting of the Board of Directors, business shall be transacted in such order and manner as the board may from time to time determine, and all matters shall be determined by the vote of a majority of the directors present, except as otherwise provided herein or required by law.

Section 11

POWERS

The Board of Directors may, except as otherwise required by law, exercise all such powers and do all such acts and things as may be exercised or done by the corporation, including, without limiting the generality of the foregoing, the unqualified power:

(1) To purchase or otherwise acquire any property, rights, or privileges on such terms as it shall determine;

(2) To authorize the creation, making and issuance, in such form as it may determine, of written obligations of every kind, negotiable or non-negotiable, secured or unsecured, and to do all things necessary in connection therewith;

(3) To remove any office of the corporation with or without cause, and from time to time to devolve the powers and duties of any officer upon any other person for the time being;

(4) To confer upon any officer of the corporation the power to appoint, remove and suspend subordinate officers and agents; and

(5) To adopt from time to time regulations, not inconsistent with these by-laws, for the management of the corporation's business and affairs.

Section 12

COMPENSATION OF DIRECTORS

Directors shall not receive any compensation for their services as directors, including, without limitation, their services as members of committees of the directors. Directors may, however, be reimbursed by the corporation for their reasonable expenses incurred in the performance of their duties as such directors.

Section 13

RESIGNATION

Any director may resign at any time by giving written notice to the Board of Directors, the President, or the Secretary of the Corporation. Unless otherwise specified in such written notice, such resignation shall take effect upon receipt thereof by the Board of Directors or such officer, and the acceptance of such resignation shall not be necessary to make it effective.

ARTICLE IV

COMMITTEES

Section 1

COMMITTEES OF THE BOARD OF DIRECTORS

The Board of Directors, by a vote of a majority of the whole board, may from time to time designate committees of the board, which may include non-board members, with the powers and duties it thereby confers, to serve at the pleasure of the board, and shall, for those committees and any others provided for herein, elect a director or directors to serve as the member or members, designating, if it desires, other directors as alternate members who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of any member of any committee and any alternative member in his place, the member or members of the committee present at the meeting and not disqualified from voting, whether or not he or they constitute a quorum, may by unanimous vote appoint another member of the Board of Directors to act at the meeting in the place of the absent or disqualified member.

Section 2

EXECUTIVE COMMITTEE

There may be an Executive Committee consisting of the president, the vice president or vice presidents, the secretary, and the treasurer of the corporation, plus an additional participating physician director.

Except with respect to matters delegated to another committee and except as shall have been otherwise provided by the Board of Directors, the Executive Committee during the intervals between meetings of the Board of Directors shall have all of the powers and duties of the Board of Directors which it may lawfully delegate to a committee of the Board of Directors. All action taken by the Executive Committee since the last meeting of the Board of Directors shall be reported to the board at its next meeting.

During the intervals between meetings of the Executive Committee, the chairman thereof shall have such of the powers and duties of the Executive Committee as shall have been conferred upon him by the Board of Directors or the Committee.

Section 3

CONDUCT OF BUSINESS

Each committee may determine the procedural rules for meeting and conducting its business and shall act in accordance therewith, except as otherwise provided herein or required by law. Adequate provision shall be made for notice to members of all meetings; one-third of the members, but not less than two, shall constitute a quorum; and all matters shall be determined by a majority vote of the members present.

ARTICLE V

OFFICERS

Section 1

GENERALLY

The officers of the corporation shall consist of a president, one or more vice presidents, a secretary, a treasurer, and such other subordinate officers as may from time to time be appointed by the Board of Directors. All officers shall be elected for one year by the directors at their first meeting after incorporation, and, thereafter, at the first meeting of the Board of Directors after the annual meeting of members. All officers not properly removed by the Board of Directors shall hold office until their successors are elected and qualified. The president must be a member of the Board of Directors.

Section 2

PRESIDENT

The president shall be the chief executive officer of the corporation. He shall have general supervision of the affairs of the corporation. He shall, when present, preside at all meetings of the members and directors. He may sign or countersign all contracts or other instruments of the corporation which shall have been authorized by the Board of Directors. He shall have general supervision and direction of all the other officers of the corporation. He shall from time to time report to the directors and members on the operations and affairs of the corporation. He shall perform all other duties as are incident to his office or are properly required of him by the Board of Directors.

Section 3

VICE PRESIDENT

The vice president shall, in the absence or disability of the president, perform the duties and exercise the powers of the president, and shall perform such other duties as the Board of Directors shall prescribe.

Section 4

SECRETARY

The secretary shall issue all authorized notices for, and shall keep minutes of, all meetings of the members and the Board of Directors. He shall have charge of the corporate books.

Section 5

TREASURER

The treasurer shall have the custody of all monies and securities of the corporation and shall keep regular books of account. He shall make such disbursements of the funds of the corporation as are proper and shall render from time to time an account of all such transactions and of the financial condition of the corporation.

Section 6

DELEGATION OF AUTHORITY

The Board of Directors may from time to time delegate the powers or duties of any officer to any other officers or agents, notwithstanding any provision hereof.

Section 7

REMOVAL

Any officer of the corporation may be removed at any time, with or without cause, by the Board of Directors.

Section 8

ACTION WITH RESPECT TO SECURITIES OF OTHER CORPORATIONS

Unless otherwise directed by the Board of Directors the president shall have power to vote and otherwise act on behalf of the corporation, in person or by proxy, at any meeting of stockholders of or with respect to any action of stockholders of any other corporation in which this corporation may hold securities and otherwise to exercise any and all rights and powers which this corporation may possess by reason of its ownership of securities in such other corporation.

ARTICLE VI

NOTICES

Section 1

NOTICES

Whenever notice is required to be given to any member, director, officer, or agent, such requirement shall not be construed to mean personal notice. Such notice may in every instance be effectively given by depositing a writing in a post office or letter box, in a postpaid, sealed wrapper, or by dispatching a prepaid telegram, addressed to such member, director, officer, or agent at his or her address as the same appears on the books of the corporation, or by contacting such member, director, officer or agent personally by telephone. The time when such notice is dispatched shall be the time of the giving of the notice.

Section 2

WAIVERS

A written waiver of any notice, signed by a member, director, officer, or agent, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to the notice required to be given to such member, director, officer, or agent. Neither the business nor the purpose of any meeting need be specified in such a waiver.

ARTICLE VII

MISCELLANEOUS

Section 1

FACSIMILE SIGNATURES

Facsimile signatures of any officer or officers of the corporation may be used whenever and as authorized by the Board of Directors or the Executive Committee.

Section 2

CORPORATE SEAL

The Board of Directors shall provide a suitable seal, containing the name of the corporation. The secretary shall be in charge of the seal.

Section 3

RELIANCE UPON BOOKS, REPORTS AND RECORDS

Each director, each member of any committee designated by the Board of Directors and each officer of the corporation shall, in the performance of his duties, be fully protected in relying in good faith upon the books of account or other records of the corporation, including reports made to the corporation by any of its officers, by an independent certified public accountant, or by an appraiser selected with reasonable care.

Section 4

FISCAL YEAR

The fiscal year of the corporation shall terminate at the end of business on the last day of December and the following fiscal year shall begin on the next day thereafter.

Section 5

TIME PERIODS

In applying any provision of these by-laws which requires that an act be done or not done a specified number of days prior to an event, or that an act be done during a period of a specified number of days prior to an event, calendar days shall be used, the day of the doing of the act shall be excluded and the day of the event shall be included.

Section 6

INDEMNIFICATION

Each person (including, here and hereinafter, the heirs, executors, administrators, or estate of such person) who is or was a director or officer of the corporation shall be indemnified by the corporation as of right to the full extent permitted or authorized by the General Corporation Law of the State of Delaware, against any fine, liability, cost, or expense asserted against him or incurred by him in his capacity as such director or officer or arising out of his status as such director or officer. The corporation may maintain insurance, at its expense, to protect itself and any such person against any such fine, liability, cost, or expense, whether or not the corporation would have the power to indemnify him against such liability under the General Corporation Law of the State of Delaware.

ARTICLE VIII

AMENDMENTS

Section 1

AMENDMENTS

These by-laws may be amended or repealed by the Board of Directors at any meeting or by the members at any meeting.

Book Reviews

DERMAL PATHOLOGY, edited by **James H. Graham, M.F., Waine C. Johnson, M.D.,** and **Elson B. Helwig, M.D.,** Harper & Row, Hagerstown, Md., 1972. 840 pp, 1155 illustrations. Price $45.00.

This text, written by seventeen contributors with eleven hundred and fifty-five illustrations, nine in color, is mainly the superb work of its editors. Dr. James Graham, now Professor of Dermatology at the University of California, was, until recently, Chief of Pathology at the Skin and Cancer Hospital of Temple University. His place was taken by Dr. Waine C. Johnson. The third editor is Dr. Elsen Helwig, who for many years has been Chief of the Department of Pathology and Branch of Dermal and Gastrointestinal Pathology at the Armed Forces Institute. There are fourteen other contributors who are all experts in their fields.

The volume begins with a chapter on the anatomy and histology of the skin by Herman Pinkus. The second chapter is on electromicroscopy by Alvin S. Zelickson. This is certainly the most beautifully illustrated chapter on this subject that I have ever seen. Then there are four more chapters on basic techniques, histochemistry, and basic, pathological changes in skin. The remainder of the book is a complete and excellent description, clear and well-written, of the various skin diseases and their histopathology. At the start of the description of each disease, there is a short paragraph on the clinical picture which is quite complete and describes the highlights of each disease. Then there is a discussion of the histopathology, histochemistry, and the differential diagnosis, and often some comment. Throughout the whole text, are numbers which refer to the references, which are recent and at the end of each chapter, and so can be easily referred to. The illustrations of the histopathology are so good that many of them must have come from the excellent collection of the Armed Forces Institute of Pathology. The nine color plates beautifully show the differential staining which is used in the histochemical techniques.

This exciting new textbook is a must in the library of anyone who is interested in skin diseases. The student of Dermatology, the Dermatologist, the General Pathologist, and the Dermato-Pathologist, I'm sure will find this text a valuable addition to his library. It is well-written, beautifully illustrated, and authoritative.

Lawrence Katzenstein, M.D.

* * *

ESSENTIALS OF ROENTGEN INTERPRETATION by **Lester W. Paul** and **John H. Juhl,** 3rd edition, Harper & Row, New York, 1972. 1099 pp, 1323 illustrations. Price $35.00.

This third edition retains the format and style of the two previous editions. It endeavors to be textbook and review source for both the student and practicing physician.

Seven years have passed since the second edition, and many new disease entities have been described and techniques developed. The osseous dysplasias have been placed in a separate chapter, and all chapters have been revised, many completely rewritten. New conditions described include the mucopolysacchardoses, thanatophoric dwarfism, Apert's syndrome, the rubella syndrome, Turner's syndrome, and a host of osseous dysplasias. Angiography in diseases of the liver and pancreas and in G.I. bleeding is discussed. New descriptions of angiography in pyelonephritis, renal polyarteritis nodosa, and angiomyolipomas are presented. Unfortunately, the contributions of both ultrasound and nuclear medicine are largely ignored. While these subjects do not fit into the title of the book, I believe they are an integral part of diagnostic radiology.

The index is thorough and easily utilized. A collection of both classic and modern references follows each chapter. Both books and journal articles are presented. The illustrative radiographs are profuse and well reproduced and generally appear on the same page as the text to which they refer.

In my opinion, the book is an excellent review for the specialist and an adequate reference book for the practicing physician and will serve the undergraduate as a complete text.

Richard P. Kennedy, M.D.

* * *

TEXTBOOK OF ELECTROCARDIOLOGY by **David Littman, M.D., F.A.C.P., F.A.C.C.** 553 pp. 627 illustrations. Harper & Row, N.Y., 1972. Price $22.50.

Dr. Littman's preface is a masterpiece from which I like to quote because I approve so utterly of his sentiments.

"Electrocardiography, from its earliest beginnings, has been an empiric, never completely objective discipline. Modern practice and improved techniques notwithstanding, much remains that cannot be measured or described and must be interpreted . . .

"The electrocardiogram is a laboratory test, albeit a special one from which diagnostic inferences are drawn. It has been suggested that the electrocardiogram, like many nonspecific tests, should be interpreted only in its clinical context and in the presence of all 'pertinent' information. I disagree with this point of view and feel that an electrocardiogram should be interpreted for itself, like a bone marrow or liver biopsy, and, to prevent bias, without knowledge of its source. Only after the initial judgment (which must be recorded) should it be compared with previous records and considered in its clinical setting . . . This has led to a growth of intellectual honesty as well as to the detection of cardiac and metabolic disorders that had not been suspected. It has also dispelled many important but erroneous diagnoses that had been made on purely clinical grounds."

The book is well indexed and copiously illustrated, but since direct writing electrocardiographs have all but replaced photographic recorders, I think textbooks of electrocardiography should not, as this one does, use illustrations made with photographic writers even if "minute details and subtleties possible with this method" are obscured. (A few years ago I met a man who bragged to me that his doctor read cardiograms with a ten power lens, thus finding a lot more abnormalities than his colleagues; I'm still shuddering at the implications.)

I could not find a clear explanation of our local cardiographers' current favorites — the periinfarction block and the hemiblock; maybe they're not as popular in Boston.

Bernadine Z. Paulshock, M.D.

* * *

GUINNESS BOOK OF WORLD RECORDS by **Norris and Ross McWhirter,** 10th edition, Sterling Publishing Co., New York, 1971. 608 pp. Price $5.95.

Chapter 1: The Human Being contains such diverse facts as: "The lightest recorded adult was Lucia (or Zuchia) Zarate (1863-89), an emaciated Mexican midget of 26½ inches who weighed 4.7 lbs at the age of 17. She 'fattened up' to 13 lbs. by her 20th birthday." and a list of the names of seven unfortunates, all dead, who weighed more than 800 pounds. One, Johnny Alee, "is reported to have weighed 1132 pounds when he fell through the flooring of his log cabin to die of a heart attack as he was suspended by his armpits." The highest rate of color blindness exists in Czechoslovakia and the lowest among the Fijians and Brazilian Indians; who is there to challenge statements like these? A good book for the man who thinks he knows everything, the best bedside book for insomniacs we've ever seen. There are 12 chapters, 608 pages, an index, and a picture of the McWhirters (two brothers), who compiled this unbelievable potpourri.

Bernadine Z. Paulshock, M.D.

In Brief

Speakers for "Ask the Doctor"

Speakers for September, 1973 on the Tuesday radio program (11:05 a.m. WDEL) produced by the Medical Society of Delaware are: September 4, *Richard A. Kahlbaugh M.D.*, Respiratory Infections and Pneumonia; September 11, *William H. Duncan, M.D.*, Drug Abuse; September 18, *Joshua Kalin, M.D.*, Glaucoma; and September 25, *Leslie Whitney, M.D.*, Cancer of the Colon.

In the News

Henry H. Stroud, M.D., Vice President of the Delaware Foundation for Medical Care, and *William D. Johnson, M.D.*, Chairman, Utilization Committee, Wilmington Medical Center, were among the most informed speakers on the program of the Invitational Regional Conference on PSRO held in Washington, D.C. on August 10-11.

Physicians' Photography

A Physicians' Photography Exhibit will be held on October 27 at the Delaware Academy of Medicine in conjunction with the 184th Annual Meeting of the Medical Society of Delaware. *Stuart W. Rose, M.D.*, Chairman of the Exhibit, urges and invites physicians to submit black and white or color prints of their own work in any format they wish so long as the prints are either matted or dry-mounted on board. Photographers are invited to call the Society office at 658-7596 for entry blanks. This will be a non-juried show. Assisting Doctor Rose with the exhibit arrangements are *McHenry Peters, M.D.* and *Ekkehard S. Schubert, M.D.*

U of D Offers Medical English Course

A course designed to provide instruction in English for the foreign-born practicing doctor, nurse, medical student, and other persons with a professional interest in the medical field, will be offered this fall by the University of Delaware. The course, "English as a Second Language for Persons in the Medical Professions," will place emphasis upon improving the comprehenion of written and rapidly spoken English within the context of medical vocabulary and phrasing.

The course will be conducted for 14 weeks beginning September 11 at the Newark campus of the University of Delaware. Registration fee is $63. Interested persons should contact Jacob Haber at the Division of Continuing Education, John M. Clayton Hall, Newark, 738-2741.

Controlled Substances

Section 1 of the Regulations promulgated in conjunction with powers granted the Secretary of Health and Social Services, Title 16, Chapter 47, Section 4731, Delaware Code, basically states that the Secretary should designate substances controlled by the Federal Government as also being controlled by the State Uniform Controlled Substances Act. Therefore, the following substances are now controlled under the Controlled Substances Act effective September 1, 1973: Schedule IV, fenfluramine (*Pondimin*); Schedule III, clortermine (*Voranil*), mazindol (*Sanorex*), benzphetamine (*Didrex*), chlorphentermine (*Pre-Sate*), and phendimetrazine (*Plegine*). S.B. 120 enacted in the General Assembly this year added the following substance to Schedule II: methaqualone (*Parest, Somnafac, Sopor, Quaalude*).

MEDICAL SOCIETY OF DELAWARE

1776-1789-1973

184th ANNUAL MEETING

October 26 and 27, 1973

PROGRAM

OCTOBER 26

HOUSE OF DELEGATES

John M. Clayton Hall, University of Delaware
Newark, Delaware

2:00 P.M. House of Delegates
5:15 P.M. Cocktails
6:00 P.M. Dinner

OCTOBER 27

PRAYER BREAKFAST

7:45 A.M. Home of Merciful Rest, Wilmington

OCTOBER 27

SCIENTIFIC SESSION

Delaware Academy of Medicine
1925 Lovering Avenue, Wilmington

8:30 A.M. REGISTRATION — EXHIBITS

9:15 A.M. CALL TO ORDER — Joseph A. Elliott, M.D., President, Medical Society of Delaware
Welcoming Remarks — Daniel A. Alvarez, M.D., President, Sussex County Medical Society
Report of the House of Delegates — Joseph W. Abbiss, M.D., Secretary, Medical Society of Delaware

9:30 A.M. HORMONAL PROFILING IN THE DIAGNOSIS AND TREATMENT OF ESSENTIAL HYPERTENSION — John H. Laragh, M.D., Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons

10:15 A.M. THYROID DISEASE 1973: DIAGNOSIS AND THERAPY — Herbert A. Selenkow, M.D., Director, Thyroid Laboratory, Peter Bent Brigham Hospital; Associate Professor of Medicine, Harvard Medical School

11:00 A.M. INTERMISSION — EXHIBITS

11:25 A.M. SMALL VESSEL DISEASE OF THE GUT — Howard M. Spiro, M.D., Professor of Medicine, Yale University School of Medicine

12:10 P.M. BUSINESS MEETING
Election of President-Elect

12:30 P.M. LUNCH — Host, Sussex County Medical Society
VISIT EXHIBITS

2:00 P.M. MEET THE PROFESSOR
Herbert A. Selenkow, M.D.
Howard M. Spiro, M.D.
Richard C. Lillehei, M.D.

2:45 P.M. THE ETIOLOGY AND TREATMENT OF SHOCK DUE TO LOW AND HIGH FLOW STATES — Richard C. Lillehei, M.D., Professor of Surgery, Department of Surgery, University of Minnesota Health Sciences Center

3:30 P.M. ADJOURNMENT

DINNER DANCE

Wilmington Country Club
Kennett Pike, Wilmington

6:30 P.M. Cocktails
7:30 P.M. Annual Banquet
Invocation — Chaplain Lynwood Swanson, Wilmington Medical Center
Dancing 'til 12:00 — Paul Wilkinson's Orchestra

▲ ▲ ▲

Program is acceptable for five prescribed hours by the American Academy of Family Physicians

PROGRAM

THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF DELAWARE

Saturday, October 27, 1973

12:30 P.M. LUNCH — Host, Medical Society of Delaware

Following the luncheon members of the Woman's Auxiliary will have an Arts and Crafts Show and serve punch from 1:00 to 4:30 p.m. in the Academy of Medicine Library. Wives and guests of physicians are welcome.

EXHIBITORS

No. 1 — Ortho Diagnostics

Representatives from Ortho Diagnostics will be available to discuss recent advances in RhoGAM® Rho (D) Immune Globulin (Human). GRAVINDEX® Slide Test for Pregnancy for office use will also be presented.

No. 2 — Aetna Life and Casualty

The Aetna Life and Casualty Booth will demonstrate Aetna's firm commitment, in cooperation with the Medical Society of Delaware, to the protection of physicians by helping them control their professional liability losses through education. The booth demonstrates dramatically the many causes of malpractice claims and how to avoid them. In attendance will be Michael Mittelmann, M.D. and K. C. Pierce, Coordinator.

No. 3 — Eckerd's Prescription Drug Stores

No. 4 — Truitt Printing Company

We are pleased to print the *Delaware Medical Journal* each month.

No. 5 — Welcome Aboard Vacation Center

Our travel agency can arrange for you any of the following: air transportation, domestic and international; steamship tickets; bus tickets; rail tickets, Amtrak and European; Traveler's checks; travel insurance; hotel reservations; automobile rentals; group travel. We are the only agency in Delaware that is open evenings and Saturdays, 9 to 9 Monday through Friday and 9 to 5:30 Saturday.

No. 6 —

No. 7 — The Upjohn Company

The Upjohn Company invites you to visit their exhibit where their representatives will be available to discuss with you our new antibiotic, Cleocin Phosphate, and will answer any questions you may have on other Upjohn products.

No. 8 — Searle Laboratories

You are cordially invited to visit the SEARLE booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be information on OVULEN®, DEMULEN ENOVID®, ALDACTAZIDE®, FLAGYL®, LOMOTIL®, PRO-BANTHINE®, METAMUCIL®, and other drugs of interest.

No. 9 — J. A. Montgomery, Inc.

Members of the Medical Society of Delaware are cordially invited to seek the latest information on any type of insurance, estate planning, or tax savings. J. A. Montgomery professional specialists will be on hand.

No. 10 — Bertholon-Rowland Agencies

The sponsored Disability Income Plan of the Medical Society of Delaware has been available to members for 20 years. Representatives of Bertholon-Rowland Agencies welcome this opportunity to review the important features of the group program and its value to you — as an individual or a professional association.

No. 11 — William P. Poythress & Company, Inc.

The Poythress Company has the priceless heritage of one hundred seventeen years of comradeship with the medical profession. May it last forever.

No. 12 and 13 — Stuart Pharmaceuticals, Division of ICI America Inc.

The Stuart Pharmaceuticals booth consists of graphic panels, product samples, and literature describing some or all of the following products: MYLANTA®, CHEWABLE SORBITRATE®, SORBITRATE® Sublingual and Oral, KINESED®, STUARTNATAL® 1+1, MYLANTA II®, and others.

No. 14 — John G. Merkel & Sons, Inc.

See the latest and finest in medical and laboratory equipment for hospital or office and the latest equipment for the home care of your patient. This equipment available upon request.

No. 15 — Ross Laboratories

You are cordially invited to visit Booth No. 15 and discuss with our representatives the numerous teaching/counseling/in-service aids available for physicians. We will be pleased to answer questions regarding Similac® infant formulas, Vi-Daylin vitamin supplements and our antibiotic, decongestant, and prenatal vitamin products.

No. 16 — Dow Pharmaceuticals

Representatives of Dow Pharmaceuticals cordially invite you to visit our exhibit. Your comments, questions and requests for any of our specialties, TUSSEND LIQUID®, TUSSEND EXPECTORANT®, QUIDE®, and SINGLETS will be welcomed.

No. 17 — Roche Laboratories

You are cordially invited to visit the Roche display. The Roche representative will gladly answer any questions you may have on any products in the Roche line. Featured will be Bactrim® and Valium®.

No. 18 — Blue Cross and Blue Shield of Delaware, Inc.

No. 19 — Medical Associates Inc.

Medical Associates will exhibit visual aids which show the benefits of computerized billing, a main benefit being lower accounts receivable through a well-planned collection program. Hand-out literature will be available at the booth.

No. 20 — HOMEMAKERS-Upjohn

Homemakers is a national organization, with offices across the country, that provides temporary part-time (or full-time) help to people who need visiting home managers, homemakers, and live-in aides. Homemakers also employs registered licensed practical nurses and nurses' aides for hospital staff relief and private-duty care.

No.21 — Alfred I. duPont Institute

No. 22 — Cedar Tree Press

Mr. N. L. Cerchio, III will be available to assist you in planning for your printing needs. Eaton's and Rytex fine stationery lines will be featured along with samples of professional stationery and administrative aids.

No. 23 —

No. 24 — IBM Data Processing Division

The newly announced IBM 3740 data entry unit will be demonstrated in a medical billing environment. The unit features a visual display on a video screen of data as it is being created from a typewriter-like keyboard. The IBM clinical accounting system, a comprehensive system for handling billing, accounts receivable, private insurance, and revenue analysis for medical clinics or doctors' associations will also be discussed.

No. 25 — PRO Services Inc. — Rockwell Associates

Men of integrity planning financial security. We welcome your visit in order to give you up-to-date information on your PRO Fund.

No. 26 — INTRAV

The Medical Society of Delaware 1974 INTRAV Adventure will feature two weeks of discovery in the Mediterranean and Greek Isles. Direct flights via World Airways in 707 private jet. Plan now to have a Mediterranean Adventure in October-November 1974.

No. 27, 28, 29 — Professional Clinical Laboratories, Inc.

No. 30 — Wyeth Laboratories

The Wyeth exhibit will feature our oral contraceptive, Ovral®, as well as our antianxiety agent, Serax®. The Tubex line of injectable products will be available for demonstration. Representatives Dave Cooper, Bob Dulick, and Jerry Guerin will be in attendance.

No. 31 — Libby Surgical Supply Company

Instruments, diagnostic and treatment supplies. We wish the members of the Medical Society of Delaware a most successful meeting.

No. 32 — Scientific Publications

Our close contact with the medical profession enables us to serve you promptly and efficiently in this dedicated field. We will fill all of your needs from stock because we specialize in service to schools of nursing, hospitals, institutions, and libraries. We carry all publishers' books in the medical profession. Non-medical books are also available through our trade department for your convenience.

No. 33 — Bristol Laboratories

You are cordially invited to visit our exhibit reflecting Bristol's leadership and enduring commitment to the manufacture of life-saving antibiotics. For your consideration, the following Bristol products are featured: Versapen® (hetacillin), Kantrex® (kanamycin sulfate), Tetrex® (tetracycline phosphate complex), Prostaphlin® (sodium oxacillin), Sultensin® (hydraflumethiazide and reserpine), Bristamycin® (erythromycin stearate), Naldecon® (antihistamine decongestant), and Polycillin® (ampicillin trihydrate). Our representatives welcome the opportunity to answer your inquiries.

No. 34 — Warner-Chilcott Laboratories

Your Warner-Chilcott representatives cordially invite the members of the Medical Society of Delaware to see and discuss what's new at Warner-Chilcott, Booth #34.

No. 35 — Ayerst Laboratories

Our representatives look forward to a visit with you, and for the opportunity to discuss the Ayerst products and services of interest to you.

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COFFEE — COURTESY, HOMEMAKERS-Upjohn

▲ ▲ ▲

The Medical Society of Delaware gratefully acknowledges the
assistance of the following in the presentation of the program:

Bristol Laboratories
CIBA Pharmaceutical Company
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A. H. Robins Company
Roche Laboratories
William H. Rorer, Inc.
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Smith Kline & French Laboratories
E. R. Squibb & Sons, Inc.
Stuart Pharmaceuticals, Division of ICI America Inc.
The Upjohn Company
Wyeth Laboratories

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EXPERIENCE WITH THREE TYPES OF INTRAUTERINE DEVICE FOR CONTRACEPTION

At the Clinic of the Delaware League for Planned Parenthood

C. Lalor Burdick, Ph.D.
Marvin V. Andersen, M.D.

Historically the middle 1960's heralded great changes in the teaching and prescription of contraception within the affiliated clinics of the Planned Parenthood Federation of America. The Delaware League for Planned Parenthood (DLPP) is one of the largest and most active of these clinics; at present it ranks in the upper fifth in size and number of patrons among the 190 presently existing member groups.

Before 1960, the array of birth control methods at Planned Parenthood for use by the female were limited to the diaphragm, contraceptive jelly, contraceptive suppositories, and douching, and for the male, the condom. The safe period and coitus interruptus completed the spectrum. Contraceptive foam appeared on the scene about 1961. The "pill" put in its appearance in Delaware about 1962 for practical clinical testing.

Experimental use of the intrauterine contraceptive device (IUD) in Delaware started in July 1964 with the Birnberg Bow. In October 1964 in New York, Population Council held its "Second International Conference on Intrauterine Contraception."[1] This meeting inaugurated the first general promotion of the IUD. In May 1965, Population Council made a contract with the Delaware League of Planned Parenthood for a clinical test program with careful follow-up records. The test involved the insertion of 200 Lippes Loops Type C. Besides these specific tests the clinic also inserted many other Lippes Types C and D, and also a small number of Birnberg Bows. Population Council also had programs for testing other types and sizes of IUD's by similar contracts at other test clinics.

It was promptly realized that, although the Lippes Loop represented a great advance over the Grafenburg Ring, which dated back to the 1920's, its performance was still considerably short of being a complete solution. The

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C. Lalor Burdick, Ph.D., is a member of the Advisory Board and of the Medical Committee for the Delaware League for Planned Parenthood.

Marvin V. Andersen, M.D., is Medical Director of the Delaware League for Planned Parenthood.

pregnancy rate per year ranged from 2% to 5%, and the overall retention and maintenance rate (because of spontaneous expulsions and removals for cause) averaged not better than 70% per initial year of use.

Consequently a wide variety of alternate devices came into being from inventors all over the world. The literature is full of results from their testing, but it should be noted that much of this literature has been more short-term promotional than statistically sound and carefully clinically controlled. Separating the promotional from the substantive has been largely the achievement of Christopher Tietze, M.D., and his specifications for tabulation of comparative results have become the standard for the world.[2]

The Shamrock was one of these alternatively invented forms of IUD. It originated locally and was the subject of U.S. Patent No. 3,312,214 issued April 4, 1967 to C. L. Burdick. The genesis of the Shamrock rests on the mathematical principle of "least work" or "virtual displacement." The principal form of the Shamrock is shown as the middle illustration in Figure I. Its make-up is a slender ring of compounded thermoplastic polymer, twist-folded and heat-set on a suitably shaped three-post mandrel. In the uterus the three interconnected, adjacently positioned but freely moving loops readily give way before a compressive or impressed force but return substantially to their original position when the force diminishes. At the crossover points, the filaments are free to slide on each other in any direction.

The uterus itself is a roughly isosceles-triangular, flat body whose interior is sheathed with a lining or "endometrium" surrounded by layers of overlapping muscular bands or fibers comprising the "myometrium." The whole structure is subject to continuing muscular contractions, generally rhythmic, and with an expulsive force component directed in part toward its lower outlet at the cervical os.

The Shamrock form is designed to be sufficiently compliant and flexible so that contractions of the uterus in any region will either seat the Shamrock more firmly or give it a force component with a net thrust upward, which is the opposite of expulsion. It is of theoretical interest that the best proportions for most efficient Shamrock performance are a balance between size, stiffness, and configuration, and total area exposed is less important.

Initial tests at the DLPP clinic showed the Shamrock in a large and crude early form to be about as good as the Lippes, which, at that time, was rated as the best standard for comparison. These tests were reported at the annual meeting of the American Association of Planned Parenthood Physicians (AAPPP) in San Francisco in April 1969. During the ensuing year the Delaware clinic inserted approximately 900 Shamrocks of an improved design and with a considerably improved performance.

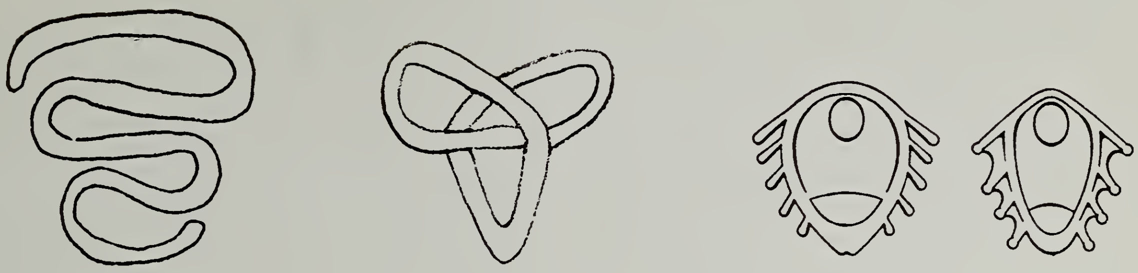
In early 1970, two important announcements in IUD technology were made, one originating in Baltimore and one in Chile. Dr. Hugh J. Davis of Johns Hopkins Medical School announced his development of the Dalkon Shield,[3] which is the third device shown in Figure 1. The other was the disclosure of Dr. Jamie Zipper in Santiago, Chile, that the anti-pregnancy efficiency of an IUD was much increased by a winding of copper wire exposed on the surface of the IUD.[4]

The statistics offered by Dr. Davis stated that the Dalkon Shield had a much lower pregnancy rate than had been achieved by either the Lippes or other devices. Confirmation, by testing in other clinics of this fact, as well as rates of spontaneous expulsions and removals for cause, was, of course, in order.

In September 1970 the IUD clinic of the DLPP accordingly swung over completely to insertions of the Dalkon Shield, except in a very few cases where the patient herself requested a Lippes Loop. In the interests of fairness to the test program, no one was given the option to choose the Shamrock. At this time, two years of extended experience have been accumulated with the Dalkon Shield.

The records of the DLPP from June 1965 show insertions under substantially identical

FIGURE 1



Lippes Loop Shamrock Dalkon Shield

conditions of 212 Lippes Loops, 1,740 Shamrocks and 1,900 Dalkon Shields. These numbers are believed to be of such magnitude and the study period of sufficient duration to be statistically and clinically significant.

Figure 1 shows the configurations and sizes of the three general types of IUD's tested and here reported, the Lippes Loop, the Shamrock, and the Dalkon Shield.

The Lippes Loops were obtained commercially from Ortho. The Shamrocks were fabricated from molding powder from Hallmark, Inc. in Buffalo, New York. Both were constructed of polyethylene compounded with 20% by weight of barium sulfate. The Dalkon Shields were purchased from A. H. Robins in sealed sterile wrappings. Fluorescent radiation spectroscopy of the Lippes and Shamrock showed barium to be the important heavy metal with lesser amounts of strontium. The Dalkon showed these same metals plus substantial quantities of copper. Presumably in all cases the strontium was present as an impurity in the barium sulfate opacifying agent.

Character and Conduct of the IUD Tests

The tests themselves were conducted in sequence: with the Lippes (over 200) insertions running from June 1965 to the end of May 1966, the various Shamrocks (total 1,740) from November 1966 through August 1970, and the Dalkon from September 1970 a total of 1,780 devices was inserted by the end of 1972.

Approximately 90% of the Lippes and Shamrock insertions were made at the clinic headquarters of the DLPP, and 10% were with private patients at the office of the Medical Director. The Dalkon tests were divided into two series: one series of 500 insertions included non-paying patients at the DLPP clinic, and the other 243 insertions involved private patients at the office of the attending physicians. The medical personnel and the clinic personnel were substantially unchanged during the entire period.

During each given test period, the run-of-registry patients all received the same device. There was in general no distinction made between nullipara or multipara, except that, with the Dalkon, the usual practice was that the nullipara was fitted with the small device rather than the medium. The types of patients and ratio of black to white remained substantially constant. About 75% of the patients were primiparas and secundiparas. If the patient showed evidence of infection, she was not fitted but was given a course of antibiotics and told to return for follow-up examination.

The only variations in the Shamrock testing were that White Tail Extra Compliants were used occasionally when there was a particularly difficult insertion, and the Small Blues were fitted mostly to sexually active adolescents from a school for delinquent girls.

Methods of preparation of the patient and insertion were standard. The insertion of Shamrocks was as previously described.[3] As far as can be established from both the records and local hospital reports, there has been

TABLE I

COMPARISON OF LIPPES LOOP C and SHAMROCKS OF VARIOUS TYPES*

	1		3		6		9		12		18		24	
Lippes Loop C (Two equal series totalling 212 insertions)														
Expulsions	3	2	6	6	8	10	11	10	12	10	12	10	12	13
Removals	5	9	16	14	19	16	24	24	26	26	28	27	28	29
Pregnancies	1	0	4	2	4	2	4	2	4	2	4	2	4	2
Total Events	9	11	26	22	31	28	39	36	42	38	44	39	44	44
Shamrock White Tail (446 insertions)														
Expulsions	1		2		4		5		6		7		8	
Removals	2		3		5		7		9		9		11	
Pregnancies	0		0		0.7		2.0		2.5		2.5		2.7	
Total Events	3		5		10		14		18		19		22	
Shamrock Black Tail (355 insertions)														
Expulsions	1		6		6		6		7		7		7	
Removals	1		2		4		6		8		8		9	
Pregnancies	0.3		1.4		2.3		2.3		3.4		4.0		4.5	
Total Events	2		9		12		14		18		19		21	
Shamrock White Extra Compliant (168 insertions)														
Expulsions	4		6		7		7		7		8		9	
Removals	1		1		2		2		3		7		9	
Pregnancies	0.6		0.6		1.2		1.2		1.2		1.2		1.8	
Total Events	6		8		10		10		11		16		20	
Shamrock Blue Small (78 insertions)														
Expulsions	3		6		9		9		9		9		9	
Removals	3		5		5		5		9		12		14	
Pregnancies	0		0		1.3		1.3		1.3		2.6		3.9	
Total Events	6		11		15		15		19		24		27	

*All events expressed in terms of insertions per 100 women no abdominal entry of any of the devices from all of our tests. This is indicative of the care with which the insertions were performed.

Presentation of Results and Discussion

Table I shows the comparative performances from the tests at the DLPP of the Lippes C and the Shamrocks of various sizes and compliancies. Table II shows the corresponding results for the separate series at the DLPP with the medium and with the small Dalkons and another separate series with the Dalkons in the private physicians' offices. All tests were made under the same conditions.

All results were expressed in events per 100 women within the elapsed time from insertion to the end of the period indicated. Each insertion is followed to a recorded terminal event, ie, expulsion, removal for cause, or pregnancy. If the patient disappears before some terminal event is recorded or short of twelve months, that patient is entered into the category of "lost to follow-up." Test re-

TABLE II

COMPARISON OF DALKON SHIELDS OF MEDIUM AND SMALL SIZE UNDER DLPP CLINIC AND UNDER PHYSICIANS' PRIVATE OFFICE CIRCUMSTANCES*

TIME	1 Mo.	3 Mos.	6 Mos.	9 Mos.	12 Mos.
Dalkon Medium (385 insertions at DLPP)					
Expulsions	0	2	2	2	3
Removals	2	4	9	15	16
Pregnancies	0	0.5	0.5	1.3	2.1
Total Events	2	7	12	18	21
Dalkon Small (115 insertions at DLPP)					
Expulsions	0	1	1	1	2
Removals	7	9	10	13	18
Pregnancies	0	1.7	1.7	1.7	1.7
Ttoal Events	7	12	13	16	22
Dalkon					
(248 insertions in physicians' private offices)					
Expulsions	0	0.4	0.4	0.4	0.8
Removals	3	6	11	13	19
Pregnancies	0	0.4	1.2	2.0**	3.2**
Total Events	3	7	13	15 **	23 **

*All events expressed in terms of insertions per 100 women
**Includes one ectopic pregnancy

sults are rounded off to the nearest whole figure except for the rate of pregnancy occurrence.

Table I results show performance of the Lippes C and the various Shamrocks by intervals over a full two-year period. The two Lippes C series, in which one followed the other in sequence, show surprisingly good agreement with each other. The Shamrock series comprised tests on five separate sizes, all of improved configuration over those first reported.[5]

Comparisons within the Shamrock series show the White Tails and Black Tails to be closely alike in performance, and both show an encouragingly low expulsion rate. The pregnancy rate is about on a par with the Lippes. On the other hand, the White Extra Compliant with the slender filament diameter (1.1mm vs 1.4mm) showed a notably low pregnancy rate.

For the investigator who is working on theoretical aspects of IUD performance, comparison of the figures for the four Shamrocks in Table I is significant. The very limber, slender filament Extra Compliant Shamrocks and the Small Blue variety perform well in their specialized usage.

The older popular concept of an IUD was that it should be as large and as stiff as a woman could bear. As concerns the Shamrock, this is a fallacy. Perhaps there is something of intrinsic significance in a design which takes advantage of a configuration derived from the mathematical principle of "least work."

Certain cases are of special interest. Patients with Lippes Loops in place for four to five years and Shamrock wearers of well over four years come in for IUD removal for various reasons. Some of the very early large-sized Shamrocks are quite deformed but still effective. Some of these Shamrocks have an appreciable coating, but undiminished flexibility and obvious efficacy.

Table II gives comparative statistics based on insertions of 750 Dalkon devices. One notes that the pregnancy rates were lower than for Lippes or Shamrock, except for the physicians' private office series. One immediate thought is this difference is a class manifestation; that is, the more affluent patients are perhaps more healthy and more fertile, and thus are more difficult to protect against pregnancy. As will be developed in later discussion, this apparent difference reconciles itself when correction is made for the widely divergent drop-out ratio between the separate series. For both Dalkon series the expulsion rates are satisfyingly low, but removals are disappointingly high. Comments regarding discomfort also averaged higher than with the other devices.

Relative Performance of IUD's during One Full Year's Use and Statistical Impact of "Lost to Follow-Up" Factor

A conventionally direct comparison of performance among the Lippes, the best Shamrock, and the Dalkon is given in Table III-A, which summarizes the 12-month figures for the presently used three types of IUD expressed in terms per 100 insertions. Table III-B presents the same statistics but expressed in terms per 100 net women participants *excluding* those "lost to follow-up" within the 12-month period.

Where tests such as these with IUD's are conducted in a voluntary society, there are bound to be drop-outs, the numbers varying according to the interest of the patients, their satisfaction with their treatment, and their sophistication and social responsibility. In twelve months 35% of Lippes and Shamrock users were "lost to follow-up." The "lost to follow-up" rate in the Dalkon clinic group was about 40%. The "lost to follow-up" rate in the physicians' office series with Dalkon was 12%. The apparently lower "lost to follow-up" rate for Lippes and Shamrock versus the Dalkon may be in part due to the Lippes and Shamrock series of insertions being a mix of clinic patients with a fair number of private office cases. The Dalkon series at DLPP with 40% dropouts, had no admixture of private office cases. Follow-up effort in each series was as conscientious as circumstances allowed.

Tables III-A and III-B demonstrate the pitfalls in interpreting two sets of observations in which the sets contain substantially differ-

TABLE III

COMPARATIVE PERFORMANCE OF LIPPES C, SHAMROCK WHITE TAIL, DALKON MEDIUM AND DALKON SMALL

A. Twelve-month gross figures expressed in terms of 100 original insertions

	Lippes C	Shamrock White Tail	Dalkon at DLPP Clinic		Dalkon in Priv.Phys. Office *
			Med.	Small	
Expulsions	11	6	3	2	1
Removals	16	9	16	20	19
Pregnancies	3	2.5	2.1	1.9	3.2
Total Untoward Events	30	18	21	24	23
Women successfully completing first 12 months	35	48	39	36	65
Percentage "lost to follow-up"	35	35	40	40	12

*The proportions here fitted were 4% "small" and 96% "medium"

B. Twelve-month net figures expressed in terms of 100 net participants, eliminating those "lost to follow-up" within the period

	Lippes C	Shamrock White Tail	Dalkon at DLPP Clinic		Dalkon in Priv.Phys. Office
			Med.	Small	
Percentage "lost to follow-up here corrected for	35	35	40	40	12
Expulsions	16	9	5	3	1
Removals	24	13	27	33	22
Pregnancies	4.5	3.7	3.5	3.2	3.7
Total Untoward Events	45	26	36	39	27
Women successfully completing first 12 months	55	74	64	61	73

ent percentage of patients "lost to follow-up."

When the different rates of "lost to follow-up" are compensated for, the rates of pregnancy are smoothed out between the various IUD's. Thus, the Dalkon rate of pregnancy results at the DLPP clinic for the gross uncompensated statistics per 100 insertions show a difference a whole unit lower than in physicians' offices. (Table III-A) But this difference drops to 0.2% when figured in terms of continuing participants and eliminating drop-outs. (Table III-B) The variations in the rates of pregnancy for the Lippes, Shamrock, and Dalkon mostly resolve themselves when converted to such a net basis rather than when judged from the gross statistics.

Similarly the particularly low pregnancy rates in Table I for the White Extra Compliant and the Blue Small Shamrocks may have a similar statistical trap or fallacy in them, because of the problems of follow-up.

Copper Content of the Dalkon Shield

Another factor of interest is the copper content of the Dalkon Shield, previously noted. One cannot judge from these Delaware tests alone whether the pregnancy prevention with the Dalkon Shield is due to its configuration or whether it is in part due to the dispersion within its structure of a substantial amount of copper compound which may be leachable from the outer layer of the polymer matrix during the IUD's stay within the uterus. If this latter is true, then the amount of copper in the active or shallow surface of the Dalkon Shield should be depleted in proportion to its time in use.

This latter premise was tested in an approximate way using fluorescent spectroscopy intensity measurements. A number of Dalkon Shields with varying periods of use were bombarded with measured radiation from an x-ray tube with Americium 241 target, and the relative intensities and amount of the induced radiations of barium, copper, and strontium were measured by computer. The radiation from Americium is not very penetrating so its excitation of corresponding fluorescent radiation should be mainly from the surfaces of the Dalkon, where copper would be leached out. On new Dalkon Shields versus ones which had been in utero for as long as one year, these tests showed that none of the induced radiation intensities decreased with the length of service of the Dalkon nor did the relative intensities of copper versus barium or strontium change appreciably. The evidence thus indicates no differential depletion of the copper content.

On the other hand, this is not to say that a Shamrock or Lippes coated with an adequately active copper-containing lacquer (old-fashioned ship's bottom paint!) would not show, initially at least, a lower pregnancy incidence similar to that being reported for the copper-wound Tatum T or Searle 7.

Summary and Conclusions

Comparison of contraceptive performance of three radically differing types of intrauterine contraceptive devices which have been widely used in Delaware are presented. These devices proved useful and effective as contraceptives. We believe the conditions under which these IUD's were inserted to be as good as will be achieved anywhere. As of today, it appears that claims of group pregnancy rates of less than 3% must be regarded of doubtful validity, unless all such groups have been subject to adequate follow-up.

The analyses here presented show that failure properly to incorporate the differences in the "lost to follow-up" factor for tests of one device versus another and for one social environment versus another can lead to substantial misinterpretations of effectiveness.

A readily administered drug which would give safe, prompt, and easy relaxation of the cervix prior to IUD insertion would give substantial opportunities for improved IUD design.

ACKNOWLEDGEMENT

Particular thanks are expressed by the authors of this article for the unremittingly constant care and attention given to this project by Mrs. Eleanor Davis, Director of Clinics of the DLPP. Our thanks are also tendered to the Crowninshield Research Laboratory of the Winterthur Museum and the Laboratory Director, Mr. Victor Hanson, for the radiation spectroscopy measurements.

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ONE-DAY HERNIA OPERATION

Albert F. Parker, M.D.

The One-Day Hernia Operation is known by various names. It is referred to as the Canadian Operation and the Shouldice Repair after the hospital in Canada which employs this procedure. It is called the California Operation or the Lichtenstein Repair for Dr. Irvin L. Lichtenstein of Los Angeles, who described the method in his book, "Hernia Repair Without Disability."* It is also referred to as the "Walking Hernia," the "No-disability Repair," and "New Hernia Operation." One of my surgeon friends in Phoenixville refers to my patients as "the Walking Wounded."

What it all means is this. There are presently two methods for repair of groin hernias which are outstanding because of their short-term hospitalization, early return to unlimited activity, and notably low recurrence rate.

Why is this important? Look at the statistics. The incidence of hernia in the United States is 40 per 1000 population. It is the commonest major operation, comprising 12% of all major surgery to males. Over 450,000 operations for hernia are done yearly. These operations involve four million hospital days annually, cause ten million work-loss days, resulting in a half billion dollar loss of productivity. Recurrence post-operatively is cited variously as from 7% to 25%, and it has been estimated that 100,000 hernias recur annually! These statistics emphasize the importance of the Shouldice and Lichenstein methods for changing these statistics.

I would like to review the two methods, both of which achieve the same results with a somewhat different technique. Both use local anesthesia, emphasize a short hospital stay and early return to normal activity.

The Shouldice Clinic in Thornhill, Ontario, Canada is a facility devoted to herniorrphaphies. The staff operates daily on all types of hernias, receiving patients from various distant areas, sometimes in bus loads. This Clinic has been in operation since 1945, and it has reported as many as 75,000 cases. They do a transversalis fascia type of repair and use continuous #34 monofilament wire sutures. Their result is a six-row wire closure done under local anesthesia (2% Novocaine), and the patient is discharged on the third postoperative day. He walks from the operating room, goes to meals in the dining room, and serves himself. Skin clips are loosened on the first post operative day and are removed on the second day. Physiotherapists put the patients through exercises until their discharge. At that time they are quite able to perform normal activities, and many drive their cars from the hospital. A close follow-up on their patients since 1955 cites a recurrence rate of 0.8%.

The other source of this form of surgery is in Los Angeles where Dr. Irvin L. Lichtenstein has been operating by his method since 1960 and has reported over 2000 cases. He performs a transversus muscle to inguinal ligament repair using, in interrupted fashion, a permanent, unbreakable synthetic suture, (Ethiflex-*Ethicon*). Local anesthesia with 0.5% Xylocaine is used, without epinephrine. His patients walk from the operating room, are kept ambulatory for approximately two miles, and are discharged 24 hours after surgery. Skin clips are removed before leaving, and the wound is held by two plastic Band-aids. The patient is advised to return to all normal activity as early as possible. Dr. Lichtenstein's recurrence rate is reported as 0.9%. His book, *Hernia Repair Without Disability* is an excellent monograph on this operation and illustrates excellently the anatomy of the inguinal region.

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* C.V. Mosby Co., 1970

Dr. Parker is a member of the surgical staff of the Phoenixville Hospital, Phoenixville, Pa.

This paper was presented at the Twenty-first Annual Scientific Assembly and Annual Meeting of the Delaware Academy of Family Physicians, April 7, 1973.

I hasten to add that I have had nothing to do with the development of these operative techniques, but I am a disciple and a firm believer that these are the best methods of groin hernia repair today. I would prophesy that hernia repair under local anesthesia with early return to physical activity will in time be performed universally.

My personal experience at Phoenixville Hospital since February 1971 with 200 consecutive cases of various types of hernias is admittedly small compared to that of Dr. Lichtenstein and the men at Shouldice, but it convinces me that it is a beneficial and successful procedure. Consider the brief hospital period, and the unrestricted postoperative activity against the average six- to seven-day hospital confinement, being unable to drive for three weeks or to return to work for six to eight or even ten weeks.

At Phoenixville Hospital our cases are operated by the Lichtenstein technique. We anesthetize with 0.5% Xylocaine solution with hyaluronidase (Wydase-*Wyeth*), sedate with Demerol and Vistaril preoperatively, and use Ethiflex sutures approximating the tendinous transversus muscle to the inguinal ligament with interrupted sutures. We test the repair, as Dr. Lichtenstein instructs, by vigorous coughing, by the Valsalva maneuver, and by having the patient raise his shoulders from the mat. This testing of the repair gives us confidence in its firmness and completeness, giving us assurance during our patient's early activity.

Personal discussion of the procedure with the patient preoperatively, first at an office visit, and again upon hospital admission is important in obtaining his confidence and cooperation for this procedure under local anesthesia. He is well rehearsed preoperatively about the local injection, the testing procedure, and the walking he is required to do, and is made to understand the purposes. This gives us a cooperative, confident patient while we proceed gently with the operative procedure. He is encouraged to talk with our standby anesthetist to divert his attention from the various non-painful sensations in the groin area.

Upon completion of the operation, the patient sits up on the operating table momentarily, is clothed, walks to the recovery room where his own robe and slippers are put on, and he is escorted by a floor nurse to his room. He receives a cup of coffee or tea and is reminded to continue his walking. Ten or fifteen minutes rest periods are permitted, but mostly he is occupied with walking. This has a notable effect on the degree of postoperative pain, so that no one ever requires postoperative analgesia by injection. One tablet of Percodan is given for pain every four hours as needed. Only occasional doses are requested, usually during the night and upon arising in the morning at which time more walking is required. We also give tetracycline HC1 250 mg every six hours prophylactically. This measure and our repeated Phiso-Hex preparation to the groin area before operation has provided us with zero incidence of wound infection to date. Regular meals are ordered unless the patient has a reason for a special diet. The following morning the skin clips are removed, several "Steristrip" adhesive bands are applied, and the patient is discharged.

His instructions are to remain active and to do anything he can do comfortably. Showering is permitted on the third day, driving at anytime. He resumes work whenever he desires, and no one is permitted more than four weeks' disability time. Follow-up examinations are made at one week, one month, and at three-month intervals. All patients are actively ambulatory and are comfortable in their activity at the one-week interval and earlier. Many express their amazement at their progress, not to mention the comments of friends and neighbors.

Is this for everyone? The Shouldice Clinic limits its procedure to exclude the very obese. They find it necessary to refuse patients who are 20% overweight and advise them to return after weight reduction. They state that as many as 90% of these do succeed in losing weight and return. Obese patients are difficult to operate for any reason, and in our short series we have included some who were obese because we have not in general been as successful in reducing our patients as have the Canadians. However, obesity is a factor in producing a recurrence as well as making a more difficult and probably less efficient repair.

We believe this is an ideal procedure for the poor risk patient, the elderly, and the cardiorespiratory patient, and it delights us as well as them when they put away the truss which they have been wearing for years. Our oldest patient was a woman of 81 years, and we are anticipating in the near future another woman with a large inguinal hernia who is 89. The Shouldice Clinic has actually operated on a patient who was 100 years old. Our chief requirement is for the patient to be ambulatory, so that he can perform the necessary postoperative walking and thus become a "walking hernia."

To conclude I wish to list the advantages of the one-day no-disability operation:

1. Freedom from anesthetic risk.
2. Avoidance of severe postoperative pain, nausea, vomiting, gas, etc.
3. Avoidance of postoperative atelectasis, pneumonia, thrombosis, embolism, etc.
4. Immediate return to regular diet.
5. Immediate postoperative recovery.
6. No pre- or postoperative enemas.
7. No postoperative urinary retention.
8. Short hospital stay — 48 hours from admission to discharge.
9. Early return to normal activity and work.

* * *

DELAWARE DOCTORS AND LAWYERS AS SEEN FROM THE BENCH

CHIEF JUSTICE DANIEL L. HERRMANN

I am pleased to participate once again in a Delaware Medico-Legal Symposium — not only because it affords me the opportunity to renew old acquaintances, but also because it seems, unfortunately, that the two professions have been drifting apart in recent years. The cement which helped to hold the two professions together, so firm and so solid in the late '50's, has apparently dried and crumbled in recent years by reason of neglect.

Our neglect is evident from the facts: The first Joint Medico-Legal Seminar, conducted by the Delaware Bar Association and the Medical Society of Delaware, was held in 1956. At that time, Dr. Washburn and I agreed that the two professions were so far apart we had to meet on "neutral territory" —and the Hotel duPont was chosen for its neutrality. Gradually, the antagonisms and suspicions wore off as the result of fraternization, and later seminars were held at the A. I. duPont Institute and the Delaware Academy of Medicine. Tonight, we meet here at the University Club. Have matters deteriorated to the point where we must meet again on "neutral ground"? I hope not.

As I said, the First Delaware Joint Seminar was held in 1956. The Second, Third, and Fourth Joint Seminars were held in 1957, 1958, and 1959. Here, this evening, we witness the Eighth. That means, of course, that

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Justice Herrmann became Chief Justice of the Delaware Supreme Court on August 9, 1973.

Address presented to the Joint Medico-Legal Symposium, University Club, Wilmington, Delaware, May 17, 1973.

in all of the almost 15 years since 1959, our two professions have met together only three times. We have, indeed, been guilty of neglect. It is high time we rectified that situation.

I deem it a privilege to participate in what I hope is a rapproachment of the two professions. I am convinced, just as I was 20 years ago, that the administration of justice must have both of our professions working together smoothly — in tandem, in harmony. The interprofessional problems and irritations of our two professions today, as I understand them, are different only in degree from the problems as they existed in the '50's. Our two professions, now as then, have mutual problems which must be seriously considered for the sake of the improvement of the administration of justice.

It is human nature to avoid and distrust that which is not thoroughly understood. To the extent that understanding overcomes the doctor's traditional distaste for the courtroom and the legal process and enables him to appreciate the lawyer's problems and attitudes, to that extent the doctor may be more receptive to the lawyer's request for assistance in the law's search for truth. To the extent that the attorney, by understanding, becomes aware of the physician's problems and thinking patterns, to that extent he will be able to deal with the physician more tactfully and with better chance of success.

In the Interprofessional Code of Conduct and Practice, adopted by the Medical Society of Delaware and the Delaware Bar Association in 1957, we Delaware doctors and lawyers made certain solemn vows to each other:

"Each profession has the duty to develop an enlightened and tolerant understanding of the other. The aims of the two professions are parallel in their service to society; this necessitates an undestanding at all times and cooperation when it is called for. Such understanding and cooperation are owed by each profession to the other in the best interests of the public as well as in the best interests of the separate reputations of the two professions."

And we earnestly said this to each other in the '50's:

"Each profession has the duty to develop an calling of the other. Neither the fact nor the appearance of incompetence, dishonesty or unethical conduct on the part of members of either profession may be tolerated. It follows, then, that each profession must vigorously support, within its own ranks as well as in the ranks of the other, those ethical concepts which each has found necessary in the public good."

And in the '50's we solemnly stated to each other:

"The law calls with increasing frequency upon the medical profession for its scientific knowledge and for its evaluation of facts so that the rights of individuals and of society may be determined before appropriate tribunals. With the growing interrelationship of medicine and law, it is inevitable that physician and attorney shall be drawn into steadily increasing association."

How true and how beautifully stated — almost 20 years ago!

We Delaware lawyers and doctors took pride, 20 years ago, in the fact that we were in the forefront, nationally, in interprofessional activities. Joint medico-legal symposia did not appear generally elsewhere in the country until 1959. In that year, the American Bar Association and the American Medical Association conducted the first joint effort. And in 1957, when we adopted our Interprofessional Code, not more than three or four other states had such codes.. There, too, it was not until two or three years later that the AMA and the ABA adopted a National Interprofessional Code, which it began urging upon the states for adoption.

What has happened to that fine interprofessional start? Why has there been a deterioration in the relationships between the two professions? Where did we go wrong? And how serious is the ailment? What are some of the interprofessional irritations and abrasions most commonly heard about these days? What are the so-called frictions, belligerences, suspicions, antagonisms, apprehensions? Let us look at a few of the most common.

It is being said by lawyers that doctors are not cooperative: that they are too hard to pin down for pre-trial conferences; that their written reports arrive too late or never; and that they are of too little help to the attorney in understanding and planning the case on behalf of the patient-client.

And it is being said by doctors that lawyers are too inconsiderate of their time, with inconsiderate scheduling of cases, last-minute settlements and postponements, and long sieges around the courtroom or the deposition room waiting to testify.

Generally speaking, now as of yore, doctors are reluctant to become involved in their patient's litigations. They do not like the courtroom, the legal process, or lawyers as a class in the latters' natural habitat, especially in view of increasing malpractice suits for which doctors too often blame lawyers. And doctors are asking a philosophical question: What is my obligation to the patient and to society after the healing process is completed, especially if my bill has not been paid? And doctors are saying that lawyers are not protecting them with regard to their fees. And lawyers are saying that doctors are charging unreasonable fees for consultation and appearance as expert medical witnesses.

And some say that doctors and lawyers are too busy these days making money, with volume of business booming constantly for both professions, with the result that time is in shorter supply for both and tempers are shorter for both. And the close and personal relationship with the doctor's patient or the lawyer's client, which we knew a couple of decades ago and which would often override any inconvenience or loss of time expended on the client-patient's behalf, has too often been supplanted, as the result of mass-production in our two professions, by a hard-nosed businesslike approach based too much upon dollars and cents considerations.

Now most, if not all, of these interprofessional irritations and frustrations are "old hat." We talked about the same problems 20 years ago. Let us look briefly at certain basic answers, many of which were approved and accepted by the two professions a long time ago.

We know that there is a basic reason for the doctor's aversion to the legal process. There is a fundamental difference in the methods of approach in law and medicine toward the discovery of truth. The lawyer attempts to maintain his postion, which he believes to be the truth, by argument and contention with opposing counsel. Without differences of opinion much of the work of the legal profession would disappear. The physician, on the other hand, does not live by contention and controversy. His training and practice are in the clinical atmosphere of the laboratory and the hospital. He wants exploration of the case history and friendly discussion of all phases of a case. When all pertinent data are collected he correlates them and forms a judgment.

And so, by training and practice, the whole tempo of the day-to-day experience of the physician and the lawyer is totally different. Is it any wonder, then, that the physician is reluctant to step out of an atmosphere in which he is at home and into an atmosphere of controversy and contention to which he is not accustomed, an atmosphere which irritates him and in which he feels, suddenly, like Exhibit A?

And in addition to being unfamiliar with, and uncomfortable in, situations which are commonplace to a lawyer, physicians complain that too often they are pratically made parties to the case in which they testify. We know, of course, that some clients and some patients are not looking for legal consel or medical advice at all; they are looking for confederates!

A basic reason for the doctor's reluctance to become involved in the legal process is his failure to understand fully the concept of examination and cross-examination. When the medical witness takes the stand and has sworn to tell the truth, the whole truth, and nothing but the truth, he gets the false impression too often that, while one attorney is doing his level best to bring out the truth, the lawyer on the other side is trying equally hard to keep the truth from being brought out.

Our system of trying a case is the adversary system. Consequently, any doctor giving testimony inevitably finds himself cast in the false role of either a plaintiff's witness or a defendant's witness. Try as he might to be impartial, he finds himself pulled and hauled toward one or the other of the contending camps by opposing counsel. Doctors must understand that, in our adversary system, next to his duty as an officer of the Court and as a man of honor, a lawyer's duty is to win his client's case. Quite naturally, he is going to emphasize and play up those aspects of his client's case that will best serve his purpose and tend towards the verdict he seeks. Indeed, if he failed to do so, he would be remiss in his duties.

The discovery of truth, after all, is the objective of a legal proceeding. After centuries of experience, the Anglo-American method of seeking truth by examination and cross-examination has not been excelled by any other method known to man. A better understanding of the concept of examination and cross-examination would be helpful to every medical witness.

Another reason for the doctor's aversion to the legal process is his unhappiness about the loss of time that it necessarily means. Everyone knows that doctors are busy and that their time should not be wasted. Doctors may be assured that the Court and counsel are concerned about wasting the time of medical witnesses; efforts can be, and are usually, made to plan the timing of the case and to make arrangements so that the doctor may be called at a designated time or on short notice whenever reasonably possible.

But, by the same token, the physician involved in litigation must realize that the attorney in the case is also a busy and important person, honor-bound to his client and to the Court, similarly with only 24 hours in his day and 30 days in his month within which to do the job the client and the Court are demanding of him as a fiduciary and as an officer of the Court.

The physician and the attorney, when either of them considers it desirable, should confer on the common problems presented in a particular case. Such conferences should be arranged in advance of the hearing, at the mutual convenience of each, recognizing that to each profession time is of the utmost importance.

In most situations, it is unfair to the client, the physician, and the cause of justice to present a medical witness who has not first conferred with the attorney and who, therefore, may not be aware of the significance to the case of the evidence he is being asked to give. It is equally obvious that, in the ordinary situation, the attorney is less able to present the full interest of his client where he has not had the advantage of advance conference with the physician. Adequate preparation for testifying is an essential and mutual obligation of the medical witness and the attorney calling him. The unprepared medical witness may do great disservice to the administration of justice.

Physicians should appreciate the importance of promptness in providing attorneys with information. Attorneys should appreciate that the doctor must be given adequate time to prepare a report. Matters may often be settled out of court to the mutual satisfaction of the parties involved. Undue delay in providing medical reports may prejudice opportunity for settlement or other disposition of the case and thus create further expense, worry, and even the loss of important testimony.

It is the physician's obligation to be in court or at deposition on time. Timing is not only important for the orderly and advantageous presentation of the case but also for the convenience of the Court, other witnesses, the jury, the attorneys, and other litigants. Attorneys should appreciate, however, that the physician has continuing and often unpredictable responsibilities to his patients. It should therefore be anticipated that, at times, courtroom procedure must give way to humanitarian considerations.

It must be recognized, however, that the dispatch of the business of the courts cannot depend upon the convenience of litigants, lawyers, or witnesses, including doctors.

It is the attorney's responsibility to advise a doctor as promptly as possible of a settlement or a postponement which either obviates the necessity of the doctor's appearance or requires a resetting of the time when the doctor's presence is required. It is the doctor's responsibility to do his best to revise his schedule to accommodate such necessary timing change.

Now, finally, a word as to the doctor's obligation to his patient, the judicial system, and society after the healing process is completed. Doctor, you have, in my opinion, a duty to the administration of justice, just as every other American citizen has the duty, to seek justice and pursue it. If you were the treating physician, you have knowledge of facts that you must bring to the legal forum, whether you like the atmosphere of the court room or not, whether your time could be more pleasantly and more profitably spent elsewhere or not, and whether your fee for treatment is paid or not. The summons of the Court to any witness must be obeyed willingly and in a spirit of cooperation if our system of justice is to survive. This must go for the medical witness just as for the workingman who must lose a week's salary because he was unfortunate enough to witness an accident, or for the poor soul who must go to jail and be held as a material witness because he was unfortunate enough to witness a crime and cannot make bail. And this duty extends, I believe, to reasonable pretrial proceedings. I hope that the rumor is false which accuses members of the medical profession of declining to treat certain patients because their ailments may appear to have a litigious future.

We practice our professions in a beautifully small State and under exemplary conditions: we are few enough for us all to be friends, working together in harmony, for the benefit of patients and clients, and in the service of the Third Branch of government. We all have a special duty to that Third Branch of government, just as we have other duties at the call of the other two branches of government. In the overall view, and in the final analysis I suggest that our differences are picayune, our antagonisms unworthy of our two great professions.

It is a matter of *noblesse oblige* that we heal these minor ailments. Let us patch up our petty differences and join more closely together, in the future as we have done in the past, in the overriding interest of the better administration of justice in our beloved State.

* * *

> In every true searcher of Nature, there is a kind of religious reverence; for he finds it impossible to imagine that he is the first to have thought out the exceedingly delicate threads that connect his perceptions. The aspect of knowledge which has not yet been laid bare gives the investigator a feeling akin to that experienced by a child who seeks to grasp the masterly way in which elders manipulate things.
>
> *Albert Einstein*

Editorials

HEALTH CARE DELIVERY: WHO, ME?

The need for health services for all people is recognized, indeed is now deemed a right for all citizens of the United States. Ideally, every person should be able to engage his own private physician to minister to his every ache and pain, twenty-four hours a day. In setting up the Medicare and Medicaid programs, the Federal Government apparently felt that the only thing that lay between adequate health care and the poor and aged was the ability to pay for these services. However, it soon became clear that money was not the only factor. Many physicians, already working to capacity with their own private patients, were unwilling to accept patients whose fees were reimbursed by the Federal Government; the added paper work, substandard fees, and a different patient population turned them off. Fortunately, they were not often sought out by those whose care they were supposed to deliver. The reasons for this were the remoteness of their offices from poor areas and reluctance of the indigent population to seek new ways of getting care. In addition, when they ventured into a private doctor's office, they were often turned off by the reception they received from his staff, other patients, or the physician himself, who had difficulty in relating to this different kind of patient.

Despite the failure of these programs, we are presently threatened with the possibility, nay the probability, of a National Health Insurance Act, which will have far-reaching effects on the private practitioner. Pretty soon we will have to increase our work load to encompass the medical needs of all citizens of Delaware, regardless of where they live, what their own resources may be, or what color they are.

Are we ready? Do we have the manpower to cope with this influx? Clearly we cannot, as medical care is presently being delivered. But I feel Delaware has a lot going for it to meet the increased demand which may soon be put upon it. Among these resources are the Health Service Centers being developed by the Department of Health and Social Services of the State, the Delaware Foundation for Medical Care, the Delaware Institute for Medical Education and Research, and the nursing program at the University of Delaware.

The Health Service Centers, located in strategic areas throughout the State where the physician population is low, are designed to act as screening centers and referral stations, and if necessary, to deliver primary care to the community it serves. The Delaware Foundation's purpose is to develop a prepaid medical resource for delivery of primary care to those enrolled for services whether their fees are paid by public or private sources. DIMER's ultimate goal is to return to Delaware, physicians trained at Jefferson Medical College to increase the number of primary physicians in our State, hopefully in areas where they are most needed. The University of Delaware is training nurses at the Master's level, to help deliver primary care in Maternal and Child Health, Internal Medicine, and Psychiatry.

We should feel pleased and proud that we have all these backup programs going for us. When the day comes when we are faced with the responsibility of delivering "quality health care" to every citizen in our State, we should be thankful that innovative ways of health care delivery are already being developed. Let us give them all our strong support.

M.J.M.

* * *

"THEY ALL WANT TO BE SPECIALISTS . . ."

I eavesdropped recently on a conversation between an older member of the staff and a friend.

"They all want to be specialists and teach or do something like that. They really aren't interested in patient care, and they act like it's beneath them. As a matter of fact, when we get the new ones here right after graduation, they aren't very experienced and aren't

Florence Nightingale
(Robert Riggs)
ARS Medica Collection,
Philadelphia Museum of Art

very good for much. Most of them are planning to specialize and can hardly wait to leave. No matter how many more new graduates we get, who's going to take care of the patients? I just don't know. Everyone wants to be a specialist."

Sound familiar? Yes, indeed. But the person speaking was not a doctor, but the charge nurse at one of the hospital nursing stations.

Organized nursing as a profession is hardly more than one hundred years old. Before the redoubtable Florence Nightingale, nursing — what there was of it — was done by slatterns and lowest order menial womenservants. It had no dignity nor organization. Miss Nightingale saw there was a need for more. Her services and those of her "nurses" were so remarkably marvelous in the Crimean War of 1853-56 that a new profession was born. But it has taken nursing only slightly more than 100 years to arrive at the same position in which medicine finds itself with some 20 or more centuries' head start: specialization, specialization. Interesting patients only. Let someone else do the routine things.

But who, pray tell? The two-year hospital-based programs for training nurses are withering under the scorn of the degree programs. The degree nurses are turning in increasing numbers to graduate degrees as clinical specialists, a title designed to take them as far away from clinical nursing as possible. They teach other nurses to be non-clinical nurses. Meanwhile, the patients languish, the doctors and hospital administrators scream for nurses, nurses, any kind of nurses.

The present ferment in nursing is a real one. The leaders of organized nursing are increasingly rejecting the concept of the nurse as the doctor's agent. She is an independent professional, providing independent services which the patient needs, services the need for which the doctor may well not appreciate. She will work *with* the doctor, but not *for* him. She works for the patient.

Consider this sentence from an advertisement for a textbook of Orthopedic Nursing, no less.

"How up-to-date is your knowledge of bone repair, joint degeneration and mechanisms of calcification?"

Is this important knowledge for nurses? I don't really think so. I may be wrong.

Recently I admitted with a fractured hip a frail 84-year-old lady who'd never been in a hospital before. The attention to her comfort needs, feeding, bathing, changing linens, proffering pain medication, etc., etc., was miserable. Mechanism of calcification? Pros and cons of surgical techniques? Nonsense. She needed a bed-pan artist. Yet the nursing guild is following medicine's lead in dictating in no uncertain terms just who may care for a patient, while drying up, or perverting into other avenues, the supply of high school graduates willing to provide it after two or three years of clinical training designed to provide nurses for bedside nursing.

Is the nursing care of patients in hospitals better now that more and more of our nurses have been trained in longer, and supposedly, better programs? Who will say so?

In nursing just as in medicine, everyone seems to be clamoring for more general practitioners, but no one wants to be one.

Perhaps one of the problems is that the education of nurses has become entirely the province of other nurses. We think that doctors, whether nurses are to be considered as working *for them* or *with them,* should begin to have a more direct and active role in the education of nurses. Satisfactory, much less high quality, patient care is at stake.

B.Z.P.

* * *

HIS PHYSICIAN DESCRIBES FREUD'S DEATH

On the following day, September 21 (1939), while I was sitting at his bedside, Freud took my hand and said to me, "My dear Schur, you certainly remember our first talk. You promised me then not to forsake me when my time comes. Now it's nothing but torture and makes no sense any more."

I indicated that I had not forgotten my promise. He sighed with relief, held my hand for a moment longer, and said, "I thank you," and after a moment of hesitation he added, "Tell Anna about this." All this was said without a trace of emotionality or self-pity, and with full consciousness of reality.

I informed Anna of my conversation, as Freud asked. When he was again in agony, I gave him a hypodermic of two centigrams of morphine. He soon felt relief and fell into a peaceful sleep. The expression of pain and suffering was gone. I repeated this dose after about 12 hours. Freud was so close to the end of his reserves that he lapsed into a coma and did not wake up again.

Freud: Living and Dying
Max Schur, M.D.
International Universities Press, New York

President's Page

PSRO — Q and A

(Professional Standards Review Organization)

Question: What is a PSRO?

Answer: A PSRO is an organization for peer review by Public Law 92-603.

Question: Will a PSRO set fees?

Answer: No.

Question: Can a Medical Society do PSRO?

Answer: No. By law medical societies are excluded from operating as PSRO's. The Delaware Foundation for Medical Care, an arm of the Medical Society, has been selected by the Board of Trustees of the Medical Society of Delaware as its designee to do peer review in Delaware.

Question: What options do Delaware physicians have regarding PSRO's?

Answer: There are only two options to take: To cooperate with development of PSRO mechanisms and have an influence upon them, or to default and thereby sacrifice any influence on PSRO.

Question: Who else might be interested in doing PSRO?

Answer: Other kinds of organizations are waiting in the wings. The American Hospital Association, American Association of Medical Colleges, state agencies, Wilmington Medical Center, Blue Cross-Blue Shield of Delaware, Inc., the Health Services Authority, and others are willing and anxious to take on the PSRO responsibility if the State Medical Society fails to do so.

Question: Why should I participate in PSRO?

Answer:
1. The Foundation is committed to peer review through action of the Board of Trustees of the Medical Society of Delaware.
2. PSRO through PL 92-603 is the law of the land.
3. Unless you take up the challenge to become involved, organized medicine may be by-passed.
4. Finally, your signature on my letter of September 13 or below will indicate your willingness to become involved in a state peer review program through the Delaware Foundation for Medical Care.

Joseph A. Elliott

I wish to become a member of the Delaware Foundation for Medical Care and agree to abide by the By-Laws (as published in the August 1973 issue of the *Delaware Medical Journal*). I understand that this commits me to participation only in the PSRO function of the Foundation.

Name ....

Signature ....

Letters to the Editor

To the Editor:

The reality which retirement from years of productive work forces upon people is devastating. All too often a retiree's inactivity is nurtured into a virtual withdrawal from the affairs of the community and if not checked, into total social isolation. The modern practitioner has little to guide him in dealing with this malaise; it is a problem of technological society, which will become more pronounced in the future as the number of retired persons swells.

Retirement usually comes about at the time when the aging process, characterized as a time of loss, has begun to occur.

Effective resources from the past, necessary for continued self maintenance, begin to wane. Declining family, friends, finances, and physical health cause an impairment of the person's societal position. This dysfunction in turn often leads the retiree to seek medical help.

The encounter between the physician and an older patient presents therapeutic opportunities which should not be overlooked by the physician. As Goldfarb has said, "Recognition and application of the therapeutic use of the self is one of the most important factors in treatment, especially with aged persons."[1] If the physician were to encourage his older patient to become socially active, it would be a form of psychotherapy.

In the application of psychotherapy to influence a patient's behavior, one accepted theory is based upon the patient's desire to please the therapist.[2] If the physician is aware of this, he may use it most advantageously when dealing with the "spiritual malaise" of the retired patient.

Traditionally volunteer activities for older Americans have been limited. There were few places willing to have people over 60 work on a regular basis. No agency was available to bring together the community and the willing workers amongst the elderly. In a very real sense, the advice to get socially involved was not feasible.

The retired senior citizen gained credibility as a national resource through the efforts of the 1971 White House Conference on Aging. From recommendations developed at the conference, an amendment was passed by the Congress to the 1965 Older Americans Act. The amendment sought to develop volunteer service opportunities for Americans of retirement age within their own communities. The end result of this amendment was the Retired Senior Volunteer Program (RSVP), developed for the purpose of creating new roles for retired citizens through volunteer service.[3]

RSVP is a part of the federal ACTION volunteer agency (Peace Corps, VISTA, etc). While RSVP is a national program, it operates on the local level almost exclusively. It is locally planned, operated, administered, and supported. Though initially federally financed, such funding is provided for on an annually decreasing basis and within five years will cease altogether.

The Delaware chapter of RSVP is now several months old. It is organized to allow anyone who wishes to participate to do so. Much of the work is done in schools, hospitals, community centers, and the like. Transportation is provided, and volunteers may even get reimbursed for meals. For those who don't wish to leave their home, there is work which can be done by them right in their quarters. All volunteers who join RSVP are fully covered by an accident insurance plan. Close supervision is maintained, and frequent, rewarding interactions between the volunteers and their supervisors is an integral goal of the program. Public recognition of volunteer activities is another facet of RSVP because it is felt that respect is an important need of the elderly.

In summary, the Retired Senior Volunteer Program exists to stimulate and encourage those over 60 years of age to become productive members of their community again. The program was largely conceived as an antidote to the spiritual malaise which often develops in retired citizens.

The physician forms a bridge between the retired citizen and his environment. When he advises his patient of the desirability of some sort of volunteer work, the physician serves to convince the older person that his services are needed and that he is capable of making an important contribution to the community. We know that satisfaction derived from successfully pursuing a prescribed course may eventually benefit behavior. If the physician has the insight of his elderly patients' needs and an awareness of his own role in the therapeutic encounter, he can play a vital role in the RSVP.

RSVP has four offices in Delaware. They are located in New Castle, Kent, and Sussex Counties, and Wilmington. More information can be obtained by contacting the Wilmington office at 1626 North Union Street, telephone 654-8984.

ALAN M. KRAUT
Assistant Director
RSVP

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Book Reviews

THE METABOLIC BASIS OF INHERITED DISEASE, 3rd edition, edited by **John B. Stanbury, James B. Wyngaarden and Donald S. Fredrickson,** McGraw-Hill, New York, 1972. 1778 pp, illustrated. Price $45.00.

The third edition of this book appears six years after the second edition. A revision was necessary because of rapid advances both in discovering new diseases and in new findings regarding hereditary and other factors influencing previously known diseases. An indication of the extent of these additions can be seen in the fact that this book is thirteen chapters and four hundred fifty pages larger than the previous edition.

The book is well written and easy to read by its method of presentation. It can aid significantly in the understanding of a disease process. It is detailed in a very scholarly way. The charts, diagrams, tables, and pictures are all very complete and give the text even greater clarity. Each chapter is well annotated with complete bibliography at the end.

However, unless the reader wants to became an authority on one of the subjects presented, it is unnecessary to have so much detail. Therefore its use is primarily as a reference text and as such is a welcome addition to any library.

R. WALTER POWELL, M.D.

* * *

CARDIOVASCULAR THERAPY: THE ART AND THE SCIENCE, edited by **Henry I. Russek, M.D.** and **Burton L. Zohman, M.D.,** Williams and Wilkins Company, Baltimore, 1971. Price $24.00.

This is not a textbook; it is the collection in hardcopy of the papers presented by more than 40 cardiologists at a symposium at St. Barnabas Hospital in New York City in 1968. The book, not released until '72, might have more lasting value if it indeed dealt in any large measure with what its title declares it to be about. However, the material devoted to the "art" of cardiology is relatively limited; the material devoted to the science occupies the most part and I believe can be better obtained in the standard reference books of cardiology. For the chief failing of this book, a failing shared by almost all the books I have ever seen which are adapted from symposia, is that speaker number 14, now chapter 14, does not have in front of him that material presented by speaker number 8, now chapter 8, and so forth. There is repetition and even disagreement, the elimination of which would have greatly added to the task of the editor trying valiantly to get his symposium in print before it gets any older, and also trying to keep it of a length suitable to fill a complete book. There is also, as well as redundancy, an inevitable incompleteness. I think, considering the cost of attending medical meetings and courses, the chief purchasers of this type of book ought to be those who contemplated attending the particular symposium but could not get to do so, as well as those who went and want to assess the quality of the meeting from the vantage of a few years later in order to decide if, when, and where to go again. Unfortunately, the publishers of medical hardbacks are loath to identify that what appears to be a textbook is an almost-verbatim printed version of a seminar or symposium. The evidence seldom appears on the jacket or spine (Russek and Zohman on the cover appear to be authors, not editors) although it is usually there in the introduction if you are careful to search it out.

At the time Christiaan Barnard wrote his chapter, "The Status of Cardiac Transplantation and the Rejection Problem," he had but one reference, a paper by Shumway in 1961. I am sure by the time the type was set, the list of references could and probably should have been much, much longer. In an earlier chapter, Dwight Harken presents "Critique of Mitral Valve and Multiple Valve Surgery," now proven an acceptable cardiac surgical procedure. The chapter contains a very simple drawing from Sir Henry Souttar's report in *1925* of his first operation on mitral stenosis. Dr. Harken wrote to Sir Henry in 1961 to ask him why he never repeated the operation. Souttar's letter is a masterpiece of directness. "I did not repeat the operation because I could not get another case. Although my patient made an uninterrupted recovery, the Physicians declared that it was all nonsense and in fact the operation was unjustifiable. In fact it is of no use to be ahead of one's time."

Barnard had already transplanted five (two were still alive) at the time of his report in '68.

Bernadine Z. Paulshock, M.D.

DISEASES OF THE BREAST by C. D. Haagensen, M.D., 2nd edition, W. B. Saunders Company, Philadelphia, 1971. 829 pp. Price $35.00.

C. D. Haagensen is now Emeritus Professor of Clinical Surgery at The College of Physicians and Surgeons in New York. This is a second edition of his book, first published in 1956. How much it has been rewritten to bring it up to date I cannot say. But I do admire Dr. Haagensen's manner and style. ". . . as I reach the age at which my experience will begin to diminish, I realize more keenly than ever that nature is so infinitely varied in her manifestations — even in the limited domain of breast disease that I cannot hope to achieve either a complete or an entirely accurate presentation of the subject" —this humility from a man whose clinical experience now totals more than fifty years.

Breast cancer is a nasty disease. Unless you are male and a total misogynist you will be involved with women—patients, relatives, friends—who get breast cancer. Three chapters in this huge book are recommended to all. "The Problem of Breast Cancer in Profile" reminds us that the incidence of mammary cancer has doubled in the USA in the last 35 years, the same period as the abandonment of breast feeding. Another disease of civilization? In the chapter on surgical treatment the "History of the Surgical Attack upon Breast Carcinoma" is neatly reviewed. In a thought-provoking chapter entitled "The Diagnosis of Breast Carcinoma," Haagensen classifies physicians' diagnostic errors; about 19% of the patients he sees have previously seen another doctor and fall into this category.

Because he is a gentleman, he also analyzes in depth histories of 17 of his own patients (out of almost 1700) in whom he feels he made a mistake.

"I wish to present the histories of these 17 patients in some detail, and to analyze the reasons for my failures, in the hope that this kind of analysis will help others to avoid such errors. It is a heavy responsibility that we, as physicians, bear in the diagnosis of lesions of the breast. Each one of us must set for himself the highest standard of exactitude in the diagnosis of lesions of the breast, always seeking to improve our personal clinical skill and to discipline it by the pathologic diagnoses in our patients."

His comments on several of his errors speak to his character:

"My error in these two patients was to not give sufficient credence to their statements of having discovered a breast tumor by self-examination. I have since learned that patients can frequently palpate changes in the breast that I cannot detect. When a patient says that she has a tumor and I cannot palpate it, I do not stand on my dignity. I ask her to point it out to me and I again search for it."

"My mistake in this instance was being rushed and examining the patient under inadequate conditions. It is difficult enough to be accurate when one has adequate time and a quiet, well-equipped office."

"I asked these two patients with lesions of questionable nature to return for early re-examination, but they failed to do so. They both waited until their carcinomas were comparatively advanced. When a patient has been asked to return for re-examination and she fails to do so, the consultant faces an insoluble dilemma. In our society where there is a free choice of physicians, one can not very well telephone or write a patient and ask her to return. All that one can do to prevent this situation from developing is to take time to explain the diagnostic problem fully to every patient, to charge her only a reasonable fee, and to hope to inspire her confidence so that she will return for re-examination."

Bernadine Z. Paulshock, M.D.

MANSON'S TROPICAL DISEASES by **Charles Wilcocks, M.D.** and **P. E. C. Manson-Bahr, M.D.**, 17th edition, Williams & Wilkins Company, Baltimore, Md. 1177 pp. 450 illustration. Price $38.00.

This is the seventeenth edition of this classic. The original Dr. Manson wrote six editions, the last one year before his death in 1922. His son-in-law prepared the next ten! The current editorship is shared by another Dr. Manson-Bahr whose kinship is not given. The book is an increasingly necessary reference even for doctors practicing in non-tropical locales: I speculatively watched a fly accompany us back to London from Nairobi last year (he was also traveling tourist though at one time he disappeared and may have even had the temerity to visit the first-class compartment). All the usual horrible pictures are included, as well as a fascinating discussion of snake bites (the victim is injected with venom in less than 50% of the episodes), and such interesting oddities as latah, a neurological hysterical-like infirmity which occurs in Malaysia and is similar to banga, a hysterical affliction of Congo women at puberty. There is also amôk, a condition which is just what it sounds like. Its fully developed form drives its victims to blind fury and to kill without reason. Koro, a disease of the Celibes, is a feeling of the penis retracting into the abdomen. The unfortunate victim may pin his penis to his leg if there is no friend to help him hold onto it. Malaria and all of the other more important if not more devastating diseases also are discussed in detail. A good browser's book, a must for any medical library.

Bernadine Z. Paulshock, M.D.

* * *

HIPPOCRATES SAID

Where there is love of man, there is also love of the art. . . . Further, some patients, though conscious that their condition is perilous, recover their health simply through their contentment with the goodness of the physician.

Changing Patterns, December 1971

In Brief

Speakers on "Ask the Doctor"

Speakers for October 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: October 2, *Herbert Heym, M.D.*, Exercise and Your Health; October 9. *Leonard H. Seltzer, M.D.*, Allergy in Childhood; October 16, *Paul Sica, M.D.*, Eczema; October 23, *Raymond Noble, M.D.*, Diverticulitis of the Colon; October 30, *Howard A. Lovett, Jr., M.D.*, Tensions, Their Origin, and Their Normality.

Tranquilizers Reclassified

Librium and Valium will be subject to tighter federal restrictions in the future but not immediately as indicated in the last Medical Society *Newsletter*. The two tranquilizers will be placed in Category IV of the Controlled Substances Act probably about December 1. Their manufacturer, Roche Laboratories, will notify physicians individually when the new ruling will take effect.

Arts and Crafts Show

Mrs. Edward T. O'Donnell has announced that the Woman's Auxiliary to the Medical Society of Delaware will hold its 2nd Annual Arts and Crafts Show, 1 to 4:30 p.m., October 27, 1973 in the library of the Academy of Medicine Building, 1925 Lovering Avenue, Wlimington. Auxiliary members and their husbands have prepared a large assortment of art and craft objects which will be offered for sale. Proceeds will go to AMA-ERF and the Academy of Medicine Student Loan fund. Refreshments will be served. This is in conjunction with the Annual Meeting of the Medical Society.

Anxiety and Stress Conference

Anxiety and Stress in Contemporary Society, a conference for clergymen, physicians, and health care professionals sponsored by the Department of Pastoral Care of the Wilmington Medical Center in cooperation with the Committee on Medicine and Religion of the Medical Society of Delaware will be held October 8-10, 1973, in the Academy of Medicine Building, 1925 Lovering Avenue, Wilmington. Speakers will include *Rollo May, Ph.D.*, *Irvine H. Page, M.D.*, and *Chaplain Lynwood L. Swanson, ThM.* For registration information write or call Mrs. Mary Money, Department of Pastoral Care, Wilmington Medical Center.

Auxiliary Receives Awards

At the June 1973 National Convention of the Woman's Auxiliary to the AMA, the Delaware Auxiliary received an Award of Merit for exceeding quota contributions to AMA-ERF. Delaware's $4513 contribution included $2166 for DIMER and $2347 for student loans and medical schools. The Delaware Academy of Medicine Student Loan Fund also benefited by $2070 from fund-raising activities of the Auxiliary. The Unified Credit Plan by which all contributions to AMA-ERF from Delaware are credited to the Auxiliary helped considerably to boost our quota. The Auxiliary thanks all physicians and their wives who made it possible for Delaware to receive this award for the first time. The Delaware Auxiliary also received a Certificate of Achievement for increased membership. Attending members at the convention, *Mrs. F. B. Lane Haines*, State President, *Mrs.*

Edward T. O'Donnell, Immediate Past President, and *Mrs. James P. Aikins* who was appointed Eastern Regional International Health Chairman for 1973-74, received Delaware's awards.

Arthritis Forum

A free public forum entitled Focus on Arthritis and sponsored by the Delaware Chapter of the Arthritis Foundation, will be held October 25, 1973 at 8 p.m. in the Academy of Medicine Building, 1925 Lovering Avenue, Wilmington. A panel which includes *I. Favel Chavin, M.D.*, *Christopher Donoho, Jr., M.D.*, *Russell Labowitz, M.D.*, and *Wai Wor Phoon, M.D.* will be present to answer questions from the audience.

Melanoma

The Delaware Division of the American Cancer Society has a new film produced for the medical profession entitled, "Melanomas: Diagnosis and Treatment." The running time of this 16mm sound and color film is 20½ minutes. It is available free on loan. Call (302) 654-6267 for information.

CLINICAL NOTICES AND MEETINGS

Computer Medicine

The Third National Conference of the Society for Computer Medicine will be held in Denver, Colorado, November 8-10, 1973. The conference will include sessions on multiphasic testing, computer EKG's, on-line patient monitoring laboratory systems, medical information systems, history systems, computer-based medical records and medical standards and automation. For additional information or registration contact: Joseph M. Edelman, M.D., President, Society for Computer Medicine, 200 Professional Center, 244 Peachtree Boulevard, Baton Rouge, La., 70806.

Heart Scientific Sessions

The American Heart Association's 46th Scientific Sessions will be held November 8-11, 1973 in Atlantic City, New Jersey. Seven half-day sessions have been designed to review important advances in Cardiovascular Diseases. For complete program and advance registration forms contact: The Delaware Heart Association, Independence Mall, Wilmington, telephone (302) 654-5269.

Immune Deficiency Diseases

The cooperation of physicians is requested in the referral of patients with ataxia-telangiectasia (characterized by cutaneous and conjunctional telangiectasia, cerebellar ataxia, and recurrent respiratory infections), for a study being conducted by the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland. A full and prompt report of all studies done as well as recommendations for therapy will be sent to referring physicians. Physicians interested in having their patients considered for admission to this study may write or telephone Warren Strober, M.D., National Cancer Institute, Building 10, Room 4N114, Bethesda, Maryland 20014, telephone (301) 496-6781.

Interstate Scientific Assembly

The 58th Annual International Scientific Assembly of the Interstate Postgraduate Medical Association will be held at the Palmer House Hotel, Chicago, October 29-November 1, 1973. This program, primarily designed for Family Practitioners, will feature seven hours of "live" television symposia and more than 50 prominent lecturers. The American Academy of Family Physicians (AAFP) has approved the Assembly for 23½ hours of elective educational credit. For information write: Alton Ochsner, M.D., Program Chairman, Interstate Postgraduate Medical Association, P.O. Box 5445, Madison, Wisconsin, 53705.

Chest Physicians' Assembly

The 39th Annual Scientific Assembly of the American College of Chest Physicians will be held October 21-25, 1973 at the Four Seasons Sheraton Hotel, Toronto, Ontario, Canada. The Assembly will feature five days of workshops, symposia, fireside conferences, and the presentation of 90 scientific papers. Registration information and materials are available from the American College of Chest Physicians, 112 E. Chestnut St., Chicago, Illinois, 60611.

Cancer Conference The National Conference on Virology and Immunology in Human Cancer sponsored by the American Cancer Society National Cancer Institute, will be held November 29-December 1, 1973 at the Waldorf-Astoria Hotel, New York City. The purpose of this conference is to present to the medical and related professions the current developments in research and clinical investigation in virology and immunology and the assessment and implications of this work in the prevention and treatment of human cancer. There is no registration fee. Programs, advance registration cards, and hotel reservation cards may be obtained from the American Cancer Society, Delaware Division, 1925 Lovering Avenue, Wilmington, (654-6267).

Neurologic Course The University of Miami School of Medicine's Division of Continuing Education will hold an in-service tutorial on "Practical Management and Therapy of Neurologic Disorders," November 5-9, 1973. This course is designed to prepare the practicing physician to recognize and manage common neurological disorders. Emphasis will be on developing skills in neurological history-taking and examination. The course is approved for 45 hours of Category I credit by the American Academy of Family Physicians and is acceptable for credit toward the Physician's Recognition Award of the AMA. To register, write: Division of Continuing Education, University of Miami School of Medicine, P.O. Box 875, Biscayne Annex, Miami, Florida, 33152.

CLASSIFIED AD SECTION

Advertisements under the Classified Ad Section are charged at the rate of 30 words or less, set solid. One insertion $4.00. Call the Journal office, 658-7596 for further information or placement. All advertisements are payable in advance. The Editorial Board reserves the right to edit copy. Closing date for new copy is the first of the month for inclusion in the current issue.

Classified advertisements of a professional nature are free to members.

GENERAL SURGEON: Graduate of the University of Budapest Medical School, Budapest, Hungary (1941). Served nineteen years on the staff of that university's Postgraduate Medical School. Recently has served residencies at Monroe Community Hospital, Rochester, New York, and at Germantown Dispensary and Hospital, Philadelphia. Available, 1974.

INTERNIST: Graduate of Hahnemann Medical College (1968). Is completing residency at Geisinger Medical Center, Danville, Pennsylvania. Available July 1974.

POSITION AVAILABLE: Emily P. Bissell Hospital is seeking a Medical Director for either full- or part-time work. Preference is for an Internist with some administrative experience. Salary is negotiable, and fringe benefits are excellent. Contact Edward F. Gliwa, M.D., Director, Division of Public Health, Dover, Delaware. Phone (302) 678-4701.

INTERNIST: Board-Certified, licensed in Pennsylvania, extensive experience in scientific data collection (15 yrs.), seeking position as Medical Director or other hospital administration position.

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Delaware
Medical Journal

OCTOBER, 1973
VOLUME 45
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DIAGNOSIS AND TREATMENT OF SKIN CANCER

Malignant lesions occur in the skin more frequently than in any other organ. These lesions (other than melanoma) are ordinarily highly curable, but correct diagnosis and treatment are essential to prevent recurrence, morbidity, and disfigurement. Occasionally, the nature and location of the tumor will make treatment difficult and complex.

Neil A. deLeeuw, M.D.

Carcinoma of the skin is the commonest malignant tumor. It is usually low grade, slow to metastasize or only locally invasive and therefore highly curable. In a small percentage of patients, however, skin cancer (not including malignant melanoma) causes disfigurement, great morbidity, and even death. Furthermore, carcinomas of the skin are occasionally highly malignant, and in certain anatomical areas even the low grade tumors present significant risk to the patient and special problems in treatment.

The common pre-malignant and malignant lesions of the skin that account for the great majority of cases seen by the clinician are classified as follows:

1. Pre-malignant lesions
    a. Actinic (senile) keratoses
    b. Radiation dermatosis
    c. Chronic ulcers and heavily scarred areas of long standing, eg, osteomyelitis, burns, etc.
2. Carcinomas
    a. Basal cell
    b. Squamous cell
    c. Intra-epidermal varieties of 2a and z

In addition, there are a number of uncommon lesions. These include pre-malignant lesions and conditions such as nevus sebaceous, cutaneous horn, xeroderma pigmentosum, lupus vulgaris, blastomycosis, and tertiary syphilis. Other malignant tumors include sebaceous carcinoma and adenocarcinoma of sweat gland origin.

By far the most important etiologic factor in the production of skin cancer is solar radiation.[1] The ultraviolet rays of most signifi-

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Neil A. deLeeuw, M.D. is an Assistant, Department of Surgery, Section of Plastic Surgery, Wilmington Medical Center.

cance are found in the range between 280 and 320 millimicra.[1] There are more of these rays in sunlight during summer months and more light in this range in warm climates. There is a high incidence of skin cancer in Texas, Arizona, and other southern states. In England, however, the population is fair complexioned and therefore seemingly at increased risk for actinic cancer. Nevertheless, in that country there is much less exposure to ultraviolet light than in the warmer climates, and the incidence of skin cancer is low.[1]

Susceptibility to actinically produced skin changes is much greater in individuals with fair skin. The factor of importance is the melanin in the basal skin layer. A change in melanin content sufficient to produce only light tanning will reduce the transmission of ultraviolet light to the dermis by about 50%.[1] Even in a climate such as that of Delaware, persons who burn readily and fail to tan when exposed to the sun can get enough untraviolet light over the years to damage their skin.

Radiation produces changes in the skin similar to and more severe than the changes produced by ultraviolet light from the sun.[2] Because radiation treatment makes the treated area more susceptible to later malignant change (and for other reasons, such as poor cosmetic result, long duration of treatment, injury to underlying tissues, etc.), it should seldom be used in the treatment of carcinoma of the skin. One important exception to this, however, would be the use of radiation therapy preoperatively in combination with surgery for the treatment of very large and aggressive lesions.

Chronic inflammation and burn scars are two additional predisposing causes of carcinoma of the skin.[2,3] Chronically inflamed areas, eg, leg ulcers or sinus tracts of osteomyelitis are generally present for many years before undergoing malignant changes. Similarly, carcinomas in burn scars generally develop only after a duration of at least twenty years. Here again, the mechanism is probably related to chronic inflammation since these scars are likely to be hypertrophic and susceptible to recurrent ulceration.

Carcinoma that arises in the skin usually comes from the epidermis and is generally either basal cell or squamous cell carcinoma. Basal cell carcinoma is usually well circumscribed and slow growing and, except in rare cases, does not metastasize. Occasionally it is very aggressive. This is true not only for certain individual tumors but also for tumors which have invaded fascial plains or mucous membrane.

Pathologically there is a wide spectrum of appearance of basal cell carcinoma, but this is of no clinical significance with regard to the behavior of the tumor. Clinically, the appearance of the tumor and its location may be of some value in judging its aggressiveness. The usual basal cell carcinoma is a pearly, raised lesion with an umbilicated center. It is very well demarcated from the surrounding skin and is of low grade malignancy. Superficial basal cell carcinomas occur in which the only clue to the presence of the tumor may be a red area in the skin. Basal cell carcinomas which progress peripherally, sclerosing in the center, and pigmented basal cells tumors also occur. These also tend to be low grade. Ulcerated lesions, with flat, irregular, infiltrating margins usually pursue a more malignant course. In addition, basal cell cancers that occur in the ear canal, around the orbit, nose and mouth, are more serious because of the possibility of their invasion of areas where they can grow for a long time without detection and in which treatment is difficult.

Squamous cell carcinoma of the skin is less common than basal cell but is definitely more malignant. These tumors can metastasize. They are usually highly curable when treated early, but the neglected tumor and the occasional anaplastic variety will be difficult to cure. In contrast to basal cell carcinoma, squamous cell carcinoma is susceptible to grading by the pathologist, and the histologic grading of these tumors into low, medium, and high grade of malignancy is clinically significant. Metastasis of low or medium grade tumors is unusual unless they have been neglected for a long time.

There is one lesion of the skin which is not a skin cancer but deserves mention since it may be mistaken both clinically and pathologically for squamous cell carcinoma and since its treatment is essentially surgical even though it is not a malignant lesion.[2] This is the keratoacanthoma. This tumor arises as a nodule in the skin and usually grows rapidly. It has a well-defined border and a large central keratin plug. The appearance is fairly characteristic clinically. These tumors will regress spontaneously if left alone. However, while they are growing they may cause considerable tissue destruction. In addition, one cannot be sure of the diagnosis without removing the tumor. Occasional squamous cell carcinomas have been misdiagnosed clinically as keratoacanthomas with disastrous consequences.

Lesions of the skin which are persistent or enlarging must be considered to be possible skin cancer, even if not ulcerated. These lesions may be flat and red in the case of superficial basal cell carcinoma, or they may be hyperkeratotic in the case of actinic keratosis or low-grade epidermoid carcinoma. Infiltration into the surrounding skin as determined by palpation of the base of the lesion suggests malignancy. The presence of ulceration definitely suggests malignancy.

Skin damaged by chronic exposure to sunlight with superficial red lesions and hyperkeratotic areas without infiltration may be treated by the topical application of 5 fluorouracil cream or lotion.[4-6] This material is rubbed into the suspicious areas twice a day and produces an inflammatory response within several weeks. Depending on the intensity of the response and the lesion being treated, therapy may be continued for anywhere from three weeks to three months. 5 fluorouracil therapy with concentrations now available will frequently cure actinic keratoses and superficial basal cell carcinoma. Higher concentrations of this agent have been used in the treatment of frankly invasive basal cell carcinoma and even squamous cell carcinoma, but at the present time this type of therapy remains experimental. If the patient fails to respond to 5 fluorouracil therapy, a second course of treatment may be tried at a later date with some hope of response. Any lesion that responds to 5 fluorouracil treatment but fails to be completely eradicated should be excised.

Lesions which are more suspicious of malignancy should be treated surgically. Those that are small and superficial can be treated adequately by curettage and electrodesiccation, which will give a high cure rate and a satisfactory cosmetic result. Larger lesions and those with infiltration must be treated by excision. When lesions involve the trunk, arms, or legs, simple excision and closure with an adequate margin of normal skin is frequently possible. Lesions that involve the face (the most common area) may frequently be treated by simple excision and closure. Whether on the trunk, the extremities, or the face, these lesions must be checked microscopically for completeness of excision. When a lesion is simply excised and closed and when it is discrete with sharp borders, frozen section may not be necessary. When the borders are indistinct, when the extent of the excision requires reconstruction by anything more than simple closure, or when the lesion is in a critical area, such as around the eye, nose, mouth, or ear, frozen section should be performed to determine the adequacy of the excision. Adequate excisional therapy with close microscopic control of margins results in cure rates for skin cancer as high as 99% in some series.[3]

Regional lymph nodes are infrequently involved by metastasis from squamous cell carcinoma of the skin. If nodes are palpable and suspicious, they should usually be biopsied, and metastasis should be proven prior to regional node dissection.

In summary, carcinoma of the skin is common. Lesions are usually low grade and not aggressive. Adequate surgical therapy of early lesions results in high cure rate. Failure of diagnosis, neglect by the patient, or inadequate treatment greatly increases the significance of these lesions in some patients.

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GRIEF AND BEREAVEMENT

An Unmet Medical Need

The medical definition of disease should encompass more than biologic causalities. Problems of long-term illness, dying, and death need to be re-ordered in terms of human values and resources. The style and dimension of dying in today's climate require a new, modern health perspective, not just for the patient, but for his survivors as well.

MELVIN J. KRANT, M.D.

Today's Bereaved and Grieving

Western man has been remarkably successful in his attempts at extending life expectancy and eliminating suffering and "premature" death. In the past seventy years alone, life expectancy in the United States has climbed from a figure of 47.3 years at the turn of the twentieth century, to 70.2 years in 1967.[1] Today's deaths occur, in the majority, in the elderly. Persons over 65 years of age now constitute 62% of all deaths, as opposed to 17% in 1900. The elderly die mainly of chronic disorders, especially diseases of the heart and blood vessels, and of cancer, and leave behind elderly, widowed spouses. It is estimated that there are between eleven and sixteen million widowed persons in the United States today. Most are widows rather than widowers, for mortality rates for women have declined more sharply than for men in the last seventy years, resulting in higher life expectancy for women. Although the elderly dominate the mortality figures today, it should not be overlooked that over 760,000 deaths occur in people under the age of 65, and of these, 110,000 deaths still do occur yearly in children under the age of 15 years.

Bereavement and Grief

In virtually all cultures and societies, structures for personal behavior in defined human crises evolve to orient the individual into appropriate methods and modes of conduct.[2,3] These structures tend to protect the society from total chaotic disruptions when a crisis occurs in the lives of its members, and to channel individual needs into patterns compatible with traditional values and stable social arrangements. Bereavement is that social arrangement wherein behavior appropriate to the socially perceived loss is elaborated. Different subcultures in the overall cultural framework place emphasis on various aspects of bereavement behavior. Funeral arrangements, behavior at burial, visiting activities, behavior at the "wake" or the "shiva" are, in part if not totally, conditioned by cultural expectations. The expectation resides in both the bereaved and those in contact with the bereaved. When traditions and rituals cease to hold domain over the behavior of a member from an ethnic or cultural background, behavior may become deviant from what is expected by others, causing considerable discomfort and strife.

Grief, on the other hand, is not role-oriented, but psychically produced. Grief can be defined as a more or less required set of psychologic and physiological reactions of biologic origin, occurring secondarily to the loss of a critical loved one. (The grief response, or elements of it, may also be seen with many types of object losses, actual or symbolic. In this paper, we deal only with the grief reaction secondary to the death of a loved one.)

Dr. Krant is Director of Tufts University-Medical Cancer Unit, Boston, Massachusetts.

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The grief reaction has all the criteria of a distinct syndrome, with relatively predictable symptomatology and course, modified by several conditions, principally: the level of dependency and intensity of interaction of the griever to the deceased; the phenomenon of "replacement" for roles; the potential for anticipatory grieving; and the age of the griever. Excellent reviews of the grief process have recently been offered by Engel,[4] Parkes,[5] Averill,[6] and Siggins.[7]

The so-called affective, normal grief reaction of adults can be demarcated into four stages:[8] First, numbness, in which the actuality of the death is not registered (or is denied) and little or no affect is felt. Frequently, tasks associated with the care of the dead, such as funeral arrangements, keep an individual occupied and prevent feelings and affects from emerging. This stage may last hours or several days. Second, a period of yearning and distress, frequently associated with anatomic visceral disturbances. These attacks of distress occur in waves and are aggravated by reminders of the deceased. There may be feelings of choking sensations, breathlessness, panic, anxiety, restlessness, irritability, with outbursts of explosive anger expressed against self, the deceased, other family members, or almost anyone. Third, depression and apathy associated with a sense of futility. Interest in the outside world is markedly diminished to absent. Social withdrawal may be seen with "loss of feeling" for important, and loved, family members, and disinclination to see old friends and other loved ones. Tasks may be started but quickly abandoned. The latter two stages frequently overlap, but after a period of anywhere from one to six weeks, these affect and behavior disturbances begin to recede. And fourth, a slow stage of restitution begins. By six months the intense feelings of grief have mostly abated, although occasional brief episodes of yearning and depression may be precipitated by reminders of the loss at certain key times, such as holidays and anniversaries.

Accompanying these psychologic reactions are a number of associated problems, principally sleeplessness, anorexia, weight loss, and occasionally in the later stage of reaction, a marked increase in appetite and weight gain. Dreams may be quite strange, and reality severely tested by feelings of the presence of the deceased. The grieving individual may, in fact, think that he is losing his mind, recognizing that these "presences" are impossible, but yet continuing to experience them.

The body of reactions is constituted in what can be called "grief work," the work of psychically burying the dead. It would appear from present data that such work is necessary for restitution to living to occur. The concept of "grief work," first introduced clinically by Freud,[9] and later elaborated by others, especially by Eric Lindemann,[10] is to allow emancipation from bondage to the deceased to progress gradually, by the process of internalizing and reviewing various aspects of the deceased (introjection), and then breaking free of the libidinal attachment to these aspects. A readjustment to the environment from which the deceased is missing gradually occurs, and new relationships may begin to develop. The behavior of an individual in grief reaction is paradoxical, for the establishment of new relationships which can alleviate grief are prevented by the social withdrawal witnessed. Paradoxical as it may appear, an individual cannot be rushed into new relationships until this detachment to the lost person has been worked through.

A number of psychologic states have been described as frequently, if not universally, found in the grief reaction. These include anger, guilt, and anxiety. The intensity of these affect states appears to be related to previous relationships with the lost person (highly ambivalent relations producing the most pronounced reactions), to the social and economic role of the lost individual in the life of the bereaved, as well as to the individual interdependent personality and to the age of the bereaved. The object of the anger may be the deceased himself, for abandoning the bereaved, but loyalty and social sanction typically result in the displacement of this affect onto others, including the self. Aggression towards oneself can result in considerable guilt or anxiety.

Grief appears to be a complex and time-consuming process, and the bereaved must work to change his view of the world and the means by which he meets and relates to it. It is a process of making psychologically real an event which is not desired.[11]

Abnormal grief reactions have long been known. These include (a) chronic grief, (b) inhibited grief, and (c) delayed grief, and are well described in the reviews quoted above. In the adolescent, and in the older child, chronic grief may become translated into aggressive and delinquent antisocial behavior.[12] Clarke has implicated the death of a parent as a participating factor in the delinquency of 38 of 500 boys admitted to the Remand Home in England.[13] Characteristic of these adolescents is that the deceased was still the focus of the perceptual field, and resentment and anger, common enough components of the chronic grief of adults, get expressed as delinquent acts.[14]

Inhibited or Absent Grief

Inhibited, or absent, grief is a state in which an extremely brief period of grieving, with little pining, is seen. This type of reaction is very common in young children (five or six years of age and younger), and in many young and adolescent people 15-17. Consequences may be seen in later life in patterns such as (a) excessive clinging and possessiveness, (b) irritability, (c) incapability of forming deep attachments, (d) jealousy and temper tantrums, (e) some forms of depressive illness, (f) other neuroses and possible psychoses, and as mentioned above, (g) violent or antisocial behavior.

Delayed grief implies an abnormally long time before grief work begins. This may be volitional, in the sense that people may protect themselves from the pain of grieving by delaying or denying access to their feelings. Delayed grief may be operationally defined as an absence of the affect of grieving for longer than five to seven days. Eventually, grieving begins, but patients with delayed grieving would appear to be at risk for entering into chronic grief or other psychiatric disturbance. Grief reactions may be delayed by months or even years, to be initiated by some emotional event, apparently unrelated to the original loss. In this latter sense, delayed and absent grief may be indistinguishable.

Typical, or normal, grieving may be altered by age, or by chronicity of the illness in the deceased. It appears that elderly people, especially women, tend to have fewer psychologic or affectual manifestations of grief, and instead, have more frequent somatic complaints, with musculo-skeletal and joint manifestations predominating. Idealization of the deceased occurs frequently, and overt hostility to other family members is not infrequent.[18]

A drawn-out, chronic illness prior to death may result in anticipatory grieving during the illness, in which gradual decathexis occurs through a period of time, with a resultant "sense of relief" or at least acceptance by the time death comes. Too successful anticipatory grieving may result in withdrawal psychically from the patient before biologic death occurs, to the despair of the dying individual, the medical staff, and other relatives. Considerable conflict and guilt may emerge after the death.

Subsequent Health

Although the data collected on grief reactions to date are retrospective, and at times appear of questionable authenticity, the implication is clear that an atypical grief reaction may eventuate into serious health problems at some later date — months to years — after the loss. The clearest indication of health alteration is seen in mortality statistics. Some hundred years ago, "grief" itself was considered an acceptable cause of death in England, although no known frequency of such deaths has been recorded.[19] Modern mortality reports appear to confirm this older implication. Kraus and Lilienfield reported in 1959 that the relative mortality risk for the widowed (male and female) was higher, when compared to the married, for each age bracket examined, but especially for persons under the age of 50.[20] Death from disease of the blood vessels and heart was four to six times higher in widowed men than in age-matched married controls. Although the time after bereavement to mortality was not studied, and many social dimensions may intervene, the authors concluded that the most likely cause of increased mortality was the baneful effect of the antecedent loss. Young, et al reported a forty percent excess in deaths above what would be expected from comparison to married, age-matched men, during the first six months of bereavement in men aged 55 and over.[21] Parkes, Benjamin and Fitzgerald amplified this report at a later date, analyzing the excess causes of death as being principally in the coronary thrombosis, arteriosclerosis, and degenerative heart disease categories.[22] This data was obtained from death certificates in London. After six months of bereavement, mortality figures paralleled controls.

Cox and Ford reported a "durational" mortality effect on English widows, extending into the second year of bereavement.[23] But a report with the most emphatic implications came from Wales in 1967, when Rees and Lufkin analyzed the survival of immediate and close relatives of people dying in a rural township.[24] The death rate of these relatives was 4.8% within the first year, as opposed to 0.68% of non-bereaved, age-matched controls. Among widows and widowers the rate was ten times higher than in controls in the first year. The Wales data indicated that this excess mortality rate of the bereaved continued for three to four years after the loss, and was particularly high for males.

Suicide rates are known to be higher among the widowed than among the married.[25] MacMahon and Pugh, analyzing 320 widowed suicides in Massachusetts, concluded that suicide risk is greatest in the first four years after loss, and especially for men in the first year of bereavement. Age-standardizied rates for bereaved males were found to be 3.5 times higher than age-matched married males, and for women the comparative ratio was 2.0.[26]

General Health

That the general health level deteriorates in the bereaved has been demonstrated in several recent publications. Marris, in 1958, reporting interview data of 72 widows one to three years after bereavement, stated that 43% claimed that their health had deteriorated.[27] Parkes, studying 46 London widows and comparing their health records (obtained from their general practitioners) one year before and one year after the loss of a spouse, found an increase of 63% in the visits that the bereaved made to their physicians, in which complaints such as restlessness, sleeplessness, and palpitations predominated.[28] This increase in medical need continued throughout the study of 18 months post-bereavement. The increase in "psychiatric" complaints was mostly in women below the age of 65 years. The use of sedative and tranquilizer drugs increased by sevenfold in these patients during the first six months of bereavement, and continued in a sharply elevated level during the entire 18 months. Multiple somatic complaints were also seen in women below 65 years of age, although the most significant observation was that women over 65 years old had fewer "psychiatric" complaints, but a marked increase in somatic disturbances, especially of muscular and articular complaints.

A more recent study of Maddison and Viola demonstrated the deterioration in general health in Boston, Massachusetts widows and in Sydney, Australia widows.[29] Twenty-one percent of Boston widows and 32% of Sidney widows (375 women studied) were found to have marked health deterioration, and an additional 35% in both cities had moderate health deterioration during part or all of the year following the loss of a spouse. Widows under 65 had an increase of 300% in the "psychiatric" area, namely nausea, feelings of panic, depression, fears, nightmares, and insomnia. "Somatic" deterioration included headaches, dizziness, rashes, anorexia, indigestion, gain and loss of weight, palpitations, chest pain and dyspnea. Frequently noted were general aching, fatigue, and a reduced work capacity. There was a marked increase in alcohol consumption by Boston widows and in the use of tranquilizers and sleeping pills in the Sydney group. In the total sample, only 36% had no health problems. In a considerable number of the widows (about 36%), the above mentioned symptoms were time-limited, disappearing, more or less, in six months.

Schmale, studying a hospitalized population, suggested that many inpatient admissions, for a variety of diagnoses, were related to separation or abandonment. Actual deaths had occurred in a few of these patients.[30]

Specific Somatic Disorders

A fairly large number of diseases have been related to loss and grief reactions, either specifically or as part of separation-abandonment reactions, of which the grief following death would be one specific type. Perhaps the most extensively reported is ulcerative colitis. In 1950, Lindemann noted that of 87 patients with ulcerative colitis, 56 had suffered a bereavement due to the death of a key person upon whom the colitis patients had been deeply dependent for interaction and emotional security. Lindemann describes a "morbid grief reaction in which adequate mourning is replaced by an impaired mental state, combined with the visceral disorder."[31] Commonly in these people, there is "a fantasy of having incorporated the dead person as though this were a concrete physical fact." Hyperthyroidism,[32] rheumatoid arthritis,[33] and asthma[34] have also been included in specific disease entities initiated by, or aggravated by, abnormal grief reactions. Reticuloendothelial diseases, including lymphomas, have been given especial attention by Greene,[35] and recently Cushing's Disease has been included in the list.[36]

Non-specific alterations in disease may come about secondary to a loss of interest in self-care. The diabetic may alter his eating habits or his medication, resulting in acute derangement. The cardiac patient may neglect his digitalis, etc. The result, of course, may be an acute medical crisis.

Specific Psychiatric Disorders

The field of psychiatry, needless to point out, is where the problems of grief and its consequences have long been resident. Pugh and McMahon reported that a relatively high proportion of widows and widowers are found among mental hospital inpatients.[37] Baler, Levin and Golde reported that at every age, widowed males and females experience a higher risk for first admission to a mental hospital than does the married person of corresponding sex and age.[38] Widowers appear to be more at risk than do widows (2.2 times vs 1.4). Data from the 1950 census in New York State and in Ohio affirms this higher risk for the widowed, but emphasizes that the risk for younger widowers, age 25-54, is 4.3 times the age-matched married controls, and for the younger widows, 2.0 times the controls. Once hospitalized, widowed patients tend to stay in longer.

Parkes, studying two psychiatric hospitals in London, examined 94 cases whose presenting psychiatric illness came on during the last illness, or within six months of the death of a parent, spouse, sibling, or child.[39] The number of patients admitted following the death of a spouse was six times the expected (studying the admission rate as a whole). Women over 40 years old predominated in this study. The diagnosis in the majority of cases was an affect disorder, 28% of the bereaved group were diagnosed as reactive or neurotic depression. Wretmark, in Sweden, also emphasized that widows are most vulnerable to serious psychiatric disorders.[40]

In a more intense study of 21 bereaved psychiatrically ill inpatients, Parkes noted that eight had lost a loved one from a chronic illness (in seven of these, cancer). Two features seem to stand out in the hospitalized group, namely, a delay in grieving, with difficulty in accepting the death, and a marked self-blame (guilt) reaction. The guilt and self-blame arise in a setting where the bereaved attempt to "explain" the death in terms of their own behavior. Excessive importance is ascribed to trivial events or omissions. Hypochondriacal symptoms, resembling those suffered by the deceased, and abnormal prolongation of intense grief were also features in a larger group (115 patients) of psychiatrically ill bereaved.[40]

The psychiatric literature is rich in retrospective implication of bereavement and grief for the appearance in later life of psychosis and psychoneurosis. Brown,[41] Barry[42] and Lindemann,[43] and Hilgarde[44] are amongst the many who have implicated childhood bereavement as a precondition for certain patients developing psychiatric disorders in adult life.

Lindemann[10] and Hilgarde et al[44] are among those who have emphasized the importance of anniversary reactions in precipitating mental or physical disease. Thus, an adult may develop a psychotic reaction, or severe neurotic behavior, when reaching the age of a parent who died, or when the patient's child reaches the age that the patient was at the time the patient's parent died.

Social Disorders

Already alluded to is the antisocial behavior not uncommon in the older child and adolescent as a consequence of loss. How much of the adolescent antisocial behavior seen today is the result of separation-abandonment, and specifically death loss, cannot be guessed. In a recent paper, Makusen and Fulton conclude that most studies of the early bereavement-later behavior disorder hypothesis are problems with methodological difficulties in assessing and interpreting findings, especially since almost all the studies are retrospective.[45]

Another level of social difficulty can be described as changes in social behavior of an individual relative to family and friends. Lindemann has pointed out that marked and long-lasting personality changes may develop, including stiffness, "woodenness," inability to enjoy friends and family, irritability, and "joylessness."[10] Parkes has indicated that widows may be listless, unable to enjoy activities, and incapable of meeting and making new friends, 13 months after the loss of spouse. Marris and Gorer indicate that these same social difficulties may exist several years after the loss.[46]

Societal Changes

While grief has always had potentially serious consequences, many of the supporting structures that made bereavement more tolerable have been altered in our society. Some of these changes relate to patterns of dying, and others to patterns of social interaction. These alterations have shifted the focus of support and help from the family either to the health professional or, in fact, to nobody. The wish to appear strong and self-regulating has been described as a characteristic of a large number of the bereaved, forcing them to respond in solitude to the effects of loss.[47] Today, dying is no longer a home-amidst-family affair. More than two-thirds of Americans now die in institutions — hospitals, nursing homes, or extended care facilities — with the majority in hospitals. Many observers have scored the isolation and loneliness of the institution as a place to die, with a marked ambiguity of family function during the terminal hours and days.[48,49] Home visits by the physician have diminished as a style of medical care giving, and the hospital accident room has become the primary physician to many. Acute deaths or disasters almost invariably are brought to the accident room, rather than to home.

Family responsibility for participating in the ritual and tasks of caring for the dying and the dead has greatly decreased, and the professional undertaker has taken over many of the tasks and ceremonies surrounding the death and funeral. The mobility of American society, population concentration in urban centers, and the belief in small nuclear families as opposed to extended families are all phenomena which take away ongoing collateral support for people.

Probably the two outstanding facts of the problem today relate to the fact that dying is now the province of the older citizen and not the young, and that the sacred traditions of conduct around death have been replaced by secular, professional performances, marked by an absence of ritual and profound tradition. Gorer has commented that "the majority of British people are today without adequate guidance as to how to treat death and bereavement. Rational men keep their mourning under control by strength of will in character, so that it need be given no public expression."[46] With death no longer a central issue to the meaning of life, and with religion no longer the responder and cojoiner between the mystical and the ordinary, the bereaved is thrown much on his own to make it through. Mourning comes to be treated as a weakness, a self-indulgence, or a "bad habit" instead ot as a psychologic necessity. Eissler has said that present day American culture is remarkable by the fact that a bereaved person does not make his state externally noticeable.[50] After the first period of shock and disorganization, the mourner receives little help towards personal reorganization.[51]

Fulton has discussed at length the value of ritual and tradition in dealing with issues of anger and guilt often intrinsic to the psychology of loss.[52] Traditional family-and-church constituted funerals allowed the demonstrative release of anger, or guilt, through allowable acting-out. Professionalization and devitalization of the funeral process and the marked diminuition of allowable acting-out, add to the individual burden of dealing with the effect of loss.

Grief Therapy

Our most honored of writers have frequently dealt with the need of the grieved to voice and share their grief. Shakespeare gives advice in Macbeth thusly: " . . . give sorrow words — the grief that does not speak whispers the o'erfraught heart, and bids it break." And in Titus Andronicus: " . . . Sorrow concealed, like an oven stopped, doth burn the heart to cinders where it is." Freud once wrote, "It is well worth notice that although mourning involves grave departures from the normal attitude to life, it never occurs to us to regard it as a pathological condition and to refer it to medical treatment. We rely on its being overcome after a certain lapse of time and we look upon any interference with it as useless, or even harmful." Freud was later to change his opinions about need. Melanie Klein wrote in 1940 " . . . If the mourner has people whom he loves and who share his grief, and if he can accept their sympathy, the restoration of the harmony of his inner world is promoted."[53] Lindemann in his classical paper stated that proper psychiatric management may prevent prolonged and serious alterations in the patient's social adjustment, as well as preventing potential disease.[10] He instructed that the psychiatrist, or trained alternate, could and should share the grief work, helping the bereaved to (a) verbalize and express his negative feelings, especially hostility and guilt; (b) extricate himself, painfully, from psychic bondage to the deceased; and (c) find new patterns of rewarding social interaction. Verbalization of negative feelings may be extremely difficult within the usual family or friend context and may require a more neutral, but trained, help.

Caplan, in his treatises on community mental health, hypothesizes that professional coping support at the time of a crisis may be critical in helping the struggling individual to utilize coping mechanisms that can improve the outcome of the crisis.[54] In the area of mourning, Caplan stresses that it is not essential to analyze reasons for difficulty in mourning — reasons relating to childhood experiences and fantasies — but to help in doing the work of mourning directly.

Proof that intervention at the time of bereavement can alter subsequent outcome — proof obtained in the classical, controlled trial experiment — does not exist at this time. Nor have interventive techniques been tested sufficiently to warrant a detailed method of approach. The potential disasters inherent in badly handled grieving, however, pleads for the beginning of application of hypothetical models of intervention, even if most people (and we cannot know figures in this regard) may be able to handle their mourning experiences reasonably well. This intervention logically should occur at the institutional level, where deaths are occurring and where trained personnel can begin dealing with the grief process before a death takes place (in chronic illness) or at the time of death (as in the accident room). The social dislocations of a death may be beyond anything that medicine can formally handle, although in the hospital, especially the community hospital, consideration might well be given toward developing or integrating programs with established community resources, such as widow-to-widow programs, church affiliated programs, and the like.

The most important issue is the recognition that interventive therapy for the grieving should be instituted as a hospital-based function. This does not eliminate the need or role of non-hospital community health, social and religious organizations. The earlier such positive intervention can begin, aimed at helping the resolution of problems and emotions inherent in a drawn out chronic disease, hypothetically the more quickly the post-death grief reaction can be resolved. A hospital-based staff unit, already assisting the exigencies faced by the family and the patient during his life, may not only help in the support of both the patient and the various family members during the dying process, dealing with the many-sided aspects of anticipatory grief, but also serve as the natural, established care-givers in the post-death period.[54,55] The on-going help should encompass not only hospital visits for the family, but home visits to family members as well. A hospital-based unit of this kind should be on consultative call for the physician, both for inpatient and accident room needs. Clearly this demands close working cooperation with the physician. A unit of this kind cannot substitute for the physician. A complete knowledge of physical health needs of the family members must be known and dealt with, as well as key historical psychological and social issues.

A unit of this nature should be staffed by social workers, clergymen, psychologists, and psychiatrists, and should be housed either in a psychiatry or social medicine department; the unit should be instructed and empowered to act as a medical-care unit, developing research and teaching responsibilities, as well as service functions. Back-up support of physicians, psychiatrists, and community resources should be available to deal potentially with long term problems, as the bereaved child, the bereaved young widow, and the bereaved elderly. The key work will probably be that of the trained social service worker, although strong psychiatric back-up support is critical. All physicians should be trained in grief concepts in order to participate actively in the care extended to the family.

How to support such an activity becomes an immediate problem. Our third-party payment systems emphasize disease-oriented tasks, rather than prevention. It may require considerable conviction and ingenuity either to have "grief" classified as a disease, or to alter payment systems to acknowledge prevention-intervention as legitimate, but this should not be an impossible problem. For, certainly, it is in the most cherished of medical enactments that prevention is vastly superior to post-hoc treatment. Establishing on-going, out-reaching hospital based programs in grief work should eventually expand our knowledge of what constitutes "normal" and "abnormal" grief reactions, direct our therapeutic efforts at described "vulnerable" as opposed to "non-vulnerable" people, and vastly improve our hypothetical positions regarding the nature and value of interventive therapy. The issues at stake appear to be large, and the time has come to see illness, dying, and death not just as disease processes, but as inherent tragedy in the human condition, requiring human resources, not only for possible cure, but for help in continued growth in life.

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STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

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B. Paid Circulation		
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D. Free distribution by mail, carrier or other means	187	189
E. Total Distribution	1024	1028
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G. Total	1100	1115

I certify that the statements made by me above are correct and complete.

ANNE SHANE BADER

CURIOUS OPHTHALMOLOGY

Harriet Durham

Ophthalmology as a specialized branch of medicine was recognized as an entity by the Egyptians. Witchcraft and folk cures undoubtedly took their toll of any possible rapid advancement in the field over the centuries. However, accurate fundamentals of the modern specialty were to arrive fairly early on the modern medical scene during the 17th and 18th centuries. The past conjures up the names of Daviel (lens extraction, 1752), von Helmholtz (invention of ophthalmoscope, 1751), von Grafe (founder of modern eye surgery).

As early as 1750 glaucoma was described, followed by recognition of night blindness in 1767, color blindness in 1794, and astigmatism in 1801.

Despite such as impressive roster of early knowledge, there were a few ophthalmologists whose eagerness led them to conclusions that today appear humorous for their lack of an analytic depth.

I quote directly from Robert John Thornton, M.D.: *The Philosophy of Medicine*, London, 1813.

> Oculists have multiplied diseases of the eye and parts surrounding, without end. Dr. Rowley has recently published a work, giving names and remedies for 118 principal diseases in the eyes and eyelids; but however one may admire his ingenuity, we shall not follow him in splitting of hairs, for as Cullen justly observes, such divisions are idle, if not hurtful: for all cases of inflammation of the membranes differ only in their intensity, as blue varies from azure to indigo, and are to be cured by remedies of the same kind more or less employed.

Francis Galton, R.F.S., wrote in 1881 of color-blindness with a somewhat jaundiced eye of prejudice. In this day, it is difficult to understand or justify his logic in any scientific terms:

> "I may take this opportunity of remarking the well known hereditary character of colour-blindness in connection with the fact that it is nearly twice as prevalent among the Quakers as among the rest of the community; the proportions being as 5.9 and 3.5% (Trans. Ophth. Soc, 1881, p. 198). We might have expected an even larger ratio. Nearly every Quaker is descended on both sides solely from members of a group of men and women who segregated themselves from the rest of the world five or six generations ago; one of their strongest opinions being that the fine arts were worldly snares, and their most conspicuous practice being to dress in drabs. A born artist could never have consented to separate himself from his fellows on such grounds, he would have felt the profession of those opinions and their accompanying practices to be treason to his aesthetic nature. Consequently few of the original stock of Quakers are likely to have had the temperament that is associated with a love for colour, and it is in consequence most reasonable to believe that a larger proportion of colour-blind men would have been found among them than among the rest of the population."

Perhaps he was right. I must admit to knowing one color-blind Quaker who owns a cat who has one blue eye and one brown eye. My logic should stand scrutiny as closely as Galton's.

Harriet Durham is the wife of Davis G. Durham, M.D., ophthalmologist.

WILLIAM J. VANDERVORT, M.D.

President, Medical Society of Delaware, 1973-1974

President's Page

TOO MANY PHYSICIANS

The University of Delaware is considering the development of a medical school. Dr. William V. Whitehorn, special assistant on medical affairs to the University, addressed the general staff meeting of the Wilmington Medical Center May 8, 1973. In Dr. Whitehorn's proposal he stated that the initial enrollment would be 30 students per class with expansion to a maximum of 50 students. At the present time in Delaware, through the Delaware Institute of Medical Education and Research (DIMER), the General Assembly supports the medical instruction of 20 Delaware students in each class at the Jefferson Medical College. The major reasons given for changing from the DIMER plan to a medical school for Delaware are to increase the number of physicians in Delaware and make medical care more readily available to the public.

The Federal Government has emphasized the shortage of physicians over the past ten years. Washington has urged medical schools to expand enrollment and has assisted in the formation of a number of new medical schools. The thesis that I now present to you is: the shortage of physicians is over and the present supply of new physicians is adequate to solve the doctor shortage. It is my contention that further expansion of the number of physicians will lead to an oversupply. This oversupply of physicians would not increase the quality of medical care to the public. It could serve only one purpose, ie, an easier way for government control of medicine.

Eli Ginzberg in the *West Virginia University Magazine* for the summer, 1973, wrote an article entitled "An End to the Doctor Shortage." Dr. Ginzberg is Professor of Economics and Director of Human Resources at Columbia University and Chairman of the National Manpower Advisory Committee. Dr. Ginzberg states that the output of American medical schools in the late 1970's will be double that of the late 1960's. It is further mentioned that in the last ten years the health industry has increased from a 50 billion dollar to an 80 billion dollar industry. It is questioned that the quality of care received by the public has been that much improved by this tremendous outlay of our national resources. Dr. Ginzberg states, "I do not know where all the physicians who will be coming out of medical school in the 1970's are going to practice. I think I know what will happen: They are going to over-doctor the American public." In this same article the request by Governor Wallace of Alabama is mentioned. Governor Wallace wants three new medical schools built in Alabama. Dr. Ginzberg believes that a strengthened public health system in Alabama would provide more relevant medical care.

The recent independent survey in Delaware by the Delaware Health Services Authority Inc. was printed in the Delaware press on September 18, 1973. In this survey 200 doctors listed in the yellow pages were called; 70% were accepting new patients and half would see the new patient within two days if he wanted a check-up. Two-thirds would see the patient the same day if he had a fever. This survey also served to contradict the general impression that it is downstate where access to physicians is most difficult.

The present excess of physicians in Boulder, Colorado, was discussed in *Medical Economics* for September, 1973. The problems of overtreatment of patients and divisions within the medical community are mentioned in this discussion.

The physicians in Delaware are aware that the physician supply has finally approached a healthy balance. In a recent survey at the Wilmington Medical Center, three out of four physicians felt that our present DIMER program should be continued and were not convinced that there was any reason to build a medical school in Delaware at this time. If the physician supply in Delaware has now reached the point where our patients can get prompt and adequate medical care, why should these same patients be forced to build a medical school that will increase the supply of physicians at the rate of 50 per year? If 50 physicians were to graduate from the Delaware Medical School this June, where would they go? In four years of operation, this medical school would produce 200 more doctors, and where would they practice? I feel these questions must be answered by the University before they can expect the necessary broad support of the medical profession or the public or the State Legislature.

William J Vandervoort MD

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Editorials

BEHAVIOR, PHYSIOLOGY AND MEDICINE

Relationships between bodily functions and the activity of the higher centers of the central nervous system have long been appreciated. A patient's attitudes and mental state are well recognized factors in the management of clinical disorders, and "psychosomatic" diseases have been categorized and defined. The precise basis for these "mind-body" relationships in terms of physiological mechanism is not yet completely known, but some understanding is available. As a general rule, in man the higher central nervous centers modulate all of the body's regulatory mechanisms through the pathways of the autonomic nervous system. Thus, for example, the basic ability of heart muscle to modify its contractility as a function of resting length (Starling's Law) is overridden by CNS regulation through the heart's autonomic nerves so that the diastolic volume and muscle fiber length of the human ventricle vary little under most conditions. Similarly, the cardiovascular-respiratory response to increased muscular activity cannot be entirely satisfactorily explained from what is known of the multiple individual reflexes of which it is composed, but seems to require a patterned "program" of activity of specific CNS centers. In the area of endocrine-metabolic functions the hypothalamic-pituitary system provides the basis for CNS influence on hormonal secretion and the regulation of the complex processes of metabolism and growth.

The functional pathways outlined, operating through modification of autonomic activity, have been generally considered to be incapable of voluntary control. Recent reports suggest that this may not necessarily be the case. Experimental animals and patients have been taught by experimental learning techniques to control such autonomic parameters as heart rate and blood pressure. A recent report describes learned control of cardiac function in a patient with Wolff-Parkinson-White Syndrome, who was able to modify heart rate and cardiac conduction apparently by "voluntarily" modifying vagal tone.[1] If autonomic control can, in fact, be taught, the significance for diagnosis and therapy of a wide variety of conditions is apparent. Moreover, the possibility of autonomic "learning" as an etiologic factor in the development of such disorders as hypertension is suggested. Much, obviously, remains to be done, but the importance of behavioral physiology as a modern dimension in the understanding of normal and abnormal bodily function seems established.

W.V.W.

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LEST WE FORGET

Of Delaware's 109 physicians in the armed services in World War II, 22, whose names are listed below, received decorations for gallantry; one died in action.

ACKART, RICHARD J., Captain — Bronze Star — August 25, 1944; Two Oak Leaf Clusters, September 7, 1944 and February 7, 1945.

*BARSKY, JOSEPH M., Lt. Colonel — Legion of Merit — February 15, 1942 to February 18, 1943.

*BEATTY, GERALD A., Major — Bronze Star — March 22, 1945 to May 8, 1945.

BRIGGS, WARD W., Lt. Commander — Commendation — November, 1943 to November, 1944.

**CHEFF, DONALD W., Captain — Bronze Star — December 13, 1944; Purple Heart — December 31, 1944; Silver Star — April 16, 1945.

*DAVIDSON, DOUGLAS T., JR., Major — Silver Star — June 6, 1944.

HUME, W. GARRETT, II, Captain — Soldier's Medal — April 9, 1945.

KELLEY, JAMES W., Major — Bronze Star — August 28, 1944 to May 8, 1945.

MARTIN, JOHN P., Lt. Commander — Commendation — January 31, 1944 to February 11, 1944.

*MUNSON, C. LEITH, Major — Bronze Star January-February, 1945.

PENNOCK, THOMAS H., Major — Bronze Star — April 15, 1945 to May 6, 1945.

*POOLE, GERALD O., Lt. Commander — Commendation — June, 1944.

*RENNIE, SYLVESTER, W., Major — Commendation — January 20, 1943 to January 27, 1943.

SHANDS, ALFRED R., JR., Colonel — Legion of Merit — June, 1944 to October, 1945.

SKURA, FRANK S., Captain — Bronze Star — September 8, 1944 to February 8, 1945.

SORTMAN, HAROLD P., Captain — Silver Star — July 12, 1943.

STAT, SIDNEY, Captain — Silver Star — April 12, 1945.

STRADLEY, SHERMER H., JR., Captain — Legion of Merit — March 13, 1943 to August 26, 1944.

STROUD, HENRY H., Major — Bronze Star — January, 1945.

URIE, J. WILLIAM, Captain — Bronze Star — June 14-15, 1945; Purple Heart — May 17, 1945.

*WARREN, ROBERT O. Y., Colonel — Commendation — November 2, 1944.

*WASHBURN, VICTOR D., Colonel — Commendation — August 17, 1942 to September 2, 1945.

Dr. Cheff, the only doctor to lose his life, was on the beach of Ie Shima, a small island off the coast of Okinawa on the day of the landing assault. A mine blew up in the ambulance he, along with eight others, was riding in, while collecting casualties under heavy fire. Two days later on the same island Ernie Pyle was killed and lies one grave away from Dr. Cheff on Ie Shima. Dr. Cheff's son, now Vice President of the Chemical Bank of New York, recently wrote to the Medical Society of Delaware, which helped support his education. (*Delaware Medical Journal*, February 1973).

B.Z.P.

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* Dead
** Killed in Action

"ABC" — THE ARTIFICIAL BETA CELL

There are more and more human beings walking around, alive and reasonably well, because of mechanical devices developed within the last decade or so, devices which are able to substitute for diseased body mechanisms. Prime among these at present is the cardiac pacemaker, now commonplace enough to require posted warnings to persons wearing pacemaker implants that they may trigger airport search devices or have their pacemakers upset, one device deleteriously affecting the other.

It now seems quite possible that within the next decade the insulin syringe and needle will be replaced by an electronic implant, rather more complex than the pacemaker but just as logical — the artificial beta cell ("ABC"). The "ABC" will allow patients with insulin-requiring diabetes to receive insulin automatically, as the level of their blood sugar dictates it is needed, rather than as a fixed dose, administered once or more daily, need it or not.

The important components will be an insulin reservoir, to be coupled to a pump, a power supply, a glucose sensor, and a minicomputer no larger than a walnut, the whole device battery- or atomic-powered. There is also the interesting possibility that the power supply may be derived from a glucose fuel cell, which will use tissue glucose as fuel for powering the "ABC," which will in turn regulate the level of tissue glucose — a nifty closed loop indeed.

At the Joslin Laboratory and at the Space Science Division of the Whittaker Corporation in Waltham, Mass., active research is underway on the various components of the "ABC." A glucose sensor which consists of platinum electrodes which generate an electrical current proportional to glucose concentration has already been used for months in monkeys. Another type of sensor is being developed at the University of Southern California. When it is further perfected, the Joslin group plans to implant the glucose sensor, attached to a recording system, in diabetic patients to allow continuous or very frequent, immediate measurement of blood glucose, thereby gaining unprecedented and marvelous insight into all-day glucose levels rather than the spot checks available to us now.

Dr. Stuart Soeldner of Joslin expects to have the first artificial beta cells available for clinical trial within three or four years. When finally practicable for general use, this device will represent the culmination and synthesis of numerous electronic and biologic technologic developments, including the availability of U-100 regular insulin, which has the stability to allow its use in a reservoir at body temperature.

The "ABC" will certainly revolutionize the management of diabetes mellitus and, by improving it, quite probably also favorably alter the prognosis. Will the "ABC" become the ABC of diabetic management? It seems likely.

B.Z.P.

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Letters to the Editor

To the Editor:

I found the editorial, 4868 Unsolicited Pages, *Delaware Medical Journal*, August 1973, interesting and timely. There is, however, one thing I couldn't understand and that is how any magazine could say that they couldn't remove your name from their mailing list.

By law they have to remove your name if you request them to do so. From a mechanical standpoint it is relatively simple.

I thought you might want to set this matter straight with your readers.

August A. Fink, Jr., Ph.D.
Publisher, Patient Care

Highlights

EFFECTS OF ALCOHOL AND LIVER DISEASE ON THE BLOOD

Richard Cooper, M.D., *Chief of Hematology Section, University of Pennsylvania. Presented to the Tuesday Morning Medical Conference, Wilmington Medical Center.*

The effects of alcohol on blood may be divided into acute effects, related directly to alcohol and to folic acid deficiency, and chronic effects, resulting from liver disease secondary to alcoholism.

The effects of acute, severe folic acid deprivation on the bone marrow have recently been studied by Herbert, confirming clinical observations. Healthy volunteers given a diet devoid of folic acid develop a low serum folate in three weeks, hypersegmented polymorphonuclear leucocytes in seven weeks, macroovalocytes around eighteen weeks, and a megaloblastic bone marrow with anemia in around twenty weeks.

The effects of folate deprivation can more readily be shown when alcohol is administered as well. For example, in one experiment, patients with very low dietary folic acid were given 70% ethanol. This resulted in thrombocytopenia, which rapidly reversed when the alcohol was discontinued despite continuation of a marginal folate diet. Bone marrow examination at the time of the thrombocytopenia demonstrated decreased megakarocytes. The anticipated prompt recovery did not occur if splenomegaly was also present. In analogous experiments decreased reticulocytes and bone marrow megalocytosis have been observed even in the presence of some dietary folic acid when alcohol was administered. In clinical alcoholism, chronic ingestion of a diet marginally deficient in folic acid seems to facilitate the direct effects of alcohol on the bone marrow.

The peripheral blood smear in alcoholic patients with folic acid deficiency shows dark blue, siderotic (ie, iron containing) granules in many of the erythrocytes. Bone marrow preparation show similar granulation of the erythroblasts, often in a quantity sufficient to ring the nucleus totally, giving rise to the name ring sideroblasts.

The chronic effects of alcohol on the hemogram are due to different mechanisms, predominantly related to splenomegaly and increased portal pressure. In the past, thrombocytopenia has been felt to be due to increased destruction of platelets by the enlarged spleen. However, recent experiments by Aster and others using chromium tagged platelets have shown that when epinephrine is administered to persons without splenomegaly there is an approximately 40% increase in circulating platelets. In the presence of splenomegaly, the number of platelets often doubles. This is probably the reason why a platelet count of 30,000 in a patient with cirrhosis is not often associated with bleeding phenomena and does not have the same clinical significance as the same degree of thrombocytopenia in a patient with leukemia; unlike the latter, the cirrhotic has a large platelet pool potentially available in his spleen.

Alcoholics also have changes in their erythrocytes secondary to specific mechanisms. Splenomegaly and increased portal pressure produce a change of the erythrocyte's shape during its passage through the spleen pulp from its normal biconcave disk form to a more spherocytic shape. Spherocytes have a decreased capacity for volume enlargement and thus have increased osmotic fragility. On the other hand, target cells, which are common in jaundiced and cirrhotic patients, are less fragile, ie, they have increased osmotic resistance. It is presently thought that abnormal lipoproteins produced by the diseased liver are responsible for the membrane changes of the erythrocyte which result in its transformation to a target shape.

The net effect in cirrhosis is one of shortening of RBC survival to 30-70 days from the normal 120 days. Quantitatively this is a mild hemolytic process and the element of hemolysis is not enormous in the anemia of cirrhosis (hemoglobin level may be 11 gm with a half life of only 30 days, although it will fall to 8 gm with a half life of 20 days). However, patients with cirrhosis level off at a lower level of hemoglobin that can not be explained solely by their hemolytic process. Apparently RBC manufacture is less than anticipated in chronic liver disease, probably representing a defect in RBC output by the bone marrow.

A recently recognized syndrome is the "spur cell syndrome," which occurs in approximately one in 15 patients with severe cirrhosis. "Spur cells" may be associated with marked hemolysis as manifested by high levels of bilirubin and a high degree of reticulocytosis. Hemolytic anemia may become a major problem with hematocrit falling to less than 20%; transfused blood in these patients is similarly destroyed.

The spur cell's membrane contains increased amounts of cholesterol. The distortion of its architecture is thought to be related to this excess cholesterol and to the increased production of the toxic bile acid, lithocholic acid, by the cirrhotic liver. Normally cholic acid is the predominant bile acid, and its degradation product, deoxycholic acid, is non-toxic. In addition to decreased production of albumin and prothrombin, the cirrhotic liver seems preferentially to manufacture chenodeoxycholic acid instead of cholic acid. Chenodeoxycholic acid is degraded to the toxic substance, lithocholic acid. It has thus been proposed, although not proven, that lithocholic acid perpetuates the liver disease beyond the presence of the inciting agent.

Normal RBC acquire spurs and cholesterol when incubated with serum from patients with spur cells. *In vivo,* the spurs, which are poorly deformable, alter to spicules which are rigid; these cells are readily hemolyzed. Spurs are most visible in wet preparations in which as many as 50% of the RBC population may be spurred. The spur cells are similar in appearance to acanthocytes associated with heredity deficits of beta lipoprotein synthesis, but they are more irregular in shape than burr cells seen with uremia. The presence of spur cells seems a bad prognostic sign with respect to recovery from the liver disease.

Summary

The bone marrow production of platelets and reticulocytes is acutely suppressed in the individual ingesting alcohol, particularly if dietary folic acid is marginally deficient. This effect of alcohol is reversible within a few days of alcohol withdrawal, even without folic acid supplementation. However, it is wise to assume that all actively drinking patients are folic acid deficient and to treat them with oral folic acid.

Chronic effects of alcohol on blood cells relate primarily to the induction of cirrhosis in the chronic alcoholic and the accompanying splenomegaly and decreased bone marrow function. Platelets become pooled in the large spleen and red cells find it difficult to traverse this enlarged organ. The result is thrombocytopenia and a mild degree of hemolysis. The response of the bone marrow to hemolysis is inadequate, and anemia is usually out of proportion to the degree of hemolysis. Occasional patients with severe cirrhosis acquire a specific red cell membrane abnormality known as spur cells; hemolysis in these patients may be a major clinical problem.

CORONARY ARTERY DISEASE— WHAT CAN BE DONE BY WHOM?

Dwight Emary Harken, M.D.—*Clinical Professor of Surgery, Emeritus, Harvard Medical School. Adapted from a presentation at the 14th Annual David Flett duPont Memorial Lecture, New Castle County Medical Society.*

The development of counterpulsation (CP) techniques for assisted circulation has been predicated on the proven physiologic principles that with low intravascular pressure, cardiac output may be high and yet oxygen consumption low, and vice-versa. Counterpulsation was coined as a term descriptive of the principle by which these devices operate: blood is removed during systole to produce lower intravascular pressure which then promotes higher cardiac output at lower oxygen cost. This blood is then counterpulsed, ie, replaced during diastole, which increases the volume of coronary perfusion which is a diastolic phenomenon.

The cardinal physiologic assertions which govern the logical clinical application of counterpulsation are as follows:

1. Myocardial oxygen demands are greater for pressure work than flow work.
2. Hemodynamic and pharmacologic maneuvers within the physician's control may increase or decrease myocardial damage.
3. Pressure work can be decreased by counterpulsation.
4. Coronary blood flow can be increased by counterpulsation.
5. Myocardial infarction may decrease cardiac output, decrease blood pressure, and increase pulse rate to produce a self-aggravating cycle to extend infarction, which produces shock and death.
6. Counterpulsation can decrease mortality or the extent of the necrotic zone in experimental coronary occlusion. Cardiogenic shock in humans has been at least temporarily corrected by counterpulsation.

The first devices for counterpulsation could only be used up to two hours because of damage to the erythrocytes and serious hemolysis. The newer balloon devices have largely eliminated this problem. These devices are of three main types, the triple balloon developed by Arthur Kantrowitz, Ph.D., the single balloon developed by his brother, Adrian Kantrowitz, M.D., and the third or double balloon. The latter has the advantage of a more powerful inflation and deflation system which allows the use of CO_2. CO_2 is denser but readily soluble in case of balloon rupture as contrasted with the less dense but insoluble and lethal gas helium.

Experimentally, when counterpulsation is used in dogs that have been subjected to coronary occlusion by plastic microsphere embolization, and a 75% mortality, a reversal to 75% survival can be achieved. Angiography demonstrates that the counterpulsed dogs have a massive opening of existing but dormant intercoronary artery communications.

To date, use of the currently available balloon counterpulsation devices has resulted in approximately an 18% salvage rate for patients in cardiogenic shock within 30 hours of their myocardial infarction. Patients who develop cardiogenic shock at a later stage in their illness have a less favorable prognosis if treated by the pump alone, but the pump has served to sustain them through emergency angiography to define appropriate jump graft or myocardial resection surgery.

Myocardial infarction is a self-aggravating disease. The associated hypotension and tachycardia both contribute to decreased coronary perfusion which furthers myocardial ischemia. Counterpulsation in appropriately chosen patients can reverse this self-perpetuating cycle of increasing damage.

Thus counterpulsation seems useful therapy for early developing cardiogenic shock, as a holding measure in patients with late onset of cardiogenic shock while they can be angiographically studied and prepared for jump graft surgery, and for patients who are in need of myocardial resection of aneurysmal, nonfunctioning myocardium.

The objectives of counterpulsation are to make large infarcts smaller and small infarcts insignificant. In fact, it is conceivable that within five years counterpulsation may be used routinely as therapy in patients with coronary occlusion and indeed for patients with intractable angina. Before the full potential of counterpulsation therapy can be exploited, it may be helpful to develop simple methods of angiography to single out coronary artery disease patterns that warrant prophylactic counterpulsation or coronary artery surgery. The correlation of disease patterns and life cycle studies is basic to such advances.

With improved angiographic techniques it is becoming increasingly apparent that many persons with severe congestive failure after myocardial infarction have occult aneurysm of the ventricle. Such patients are being operated with a very high index of success in correcting the congestive heart failure. Those patients can occasionally be carried on counterpulsation during the critical period of their study and preparation for surgery.

Serious mental problems are associated with the care of critically ill patients in CCU's or ICU's, particularly those having cardiac surgery. The causes of these mental changes are various and varied. They can occur from metabolic and ischemic factors as well as sensory deprivation, insomnia, and emotional factors. The term *periontogenic* has been coined to embrace the psychological, metabolic, emotional, iatrogenic, traumatic, etc. effects on the mentation of these patients. The understanding of periontogenic diseases (literally, genesis in the things about) is at once a great step toward correcting this complication of otherwise lifesaving care.

RADIOIODINE VERSUS THYROIDECTOMY FOR HYPERTHYROIDISM

Brown M. Dobyns, M.D., Ph.D., *Professor of Surgery, Cleveland Metropolitan General Hospital. Presented at Surgical Conference, Wilmington Medical Center.*

Because of the high mortality rate from surgery in the early '20's, x-radiation of the toxic thyroid gland was tried, but a decrease in the toxicity was not very immediately apparent. It took approximately ten years and the advent of the BMR as a reliable measure of the degree of thyrotoxicosis before it was proven that indeed some of the patients with Graves' disease who had received x-radiation had really returned to a euthyroid state. Patients so treated recovered very slowly, and improvement continued over a span of years.

In 1922 Plummer first suggested that iodine should be used to modify Graves' disease. It took some time for clinicians to accept Plummer's teaching that the response to iodine in the case of hyperthyroidism of Graves' disease differed from the response in patients with toxic nodular goiter. The former improved; the latter became worse because the autonomous tumors used the iodine to make more hormone.

By the mid-'30's, the use of iodine as preoperative preparation for Graves' disease had resulted in a great improvement in the operative mortality which was reduced to three to five percent. The introduction of the antithyroid drugs in the early 1940's was used to curtail the hyperthyroidism in the more severe cases so that the mortality was further reduced to 0.1 percent. Following the introduction of these drugs there was in some areas a swell of enthusiasm for the chronic use of them to the relative exclusion of surgery. This enthusiasm has largely passed because of the high recurrence rate and advent of ^{131}I therapy. Subtotal thyroidectomy following a brief period of preparation with an antithyroid drug is a tried and proven method; however, proficiency in performing the operation has declined in some areas because of decreased experience.

There seems to be little place for the chronic use of antithyroid drugs today. Radioiodine or thyroidectomy are the preferred forms of therapy. The indications for one or the other seem quite clear. Currently the ideal management results from about 50 percent being treated with radioiodine and 50 percent being treated by surgery. We actually hold no special brief for either, for we have radioiodine in our laboratory and use it freely, and we carry out or supervise the surgery when that is preferred.

The successful use of antithyroid drugs depends on the patient's remembering to take the medication regularly and for long periods of time, at least two years. This requires continued medical management. The proper dosage requires assiduous and expert physician attention. Unfortunately the patient or the physician becomes careless. The hyperthyroidism usually recurs, and the late recurrence rate is very high. Antithyroid drugs modify the disease so that when it does recur the flagrant features of the disease are no longer apparent and the laboratory data are no longer convincing; the sitution becomes smoldering Graves' disease. It is becoming increasingly frequent to see relatively young persons who, 15 to 20 years after a period of chronic treatment with antithyroid drugs, are found suffering from auricular fibrillation secondary to thyrotoxic heart disease with only marginal laboratory evidence of thyrotoxicosis.

^{131}I treatment has the advantages of being painless and sure, if enough ^{131}I is given. It does not necessitate hospitalization. On the other hand, the costs usually charged for treatment with ^{131}I are in the neighborhood of the costs of thyroidectomy. The likelihood of producing carcinoma of the thyroid from radioiodine therapy now seems very remote as will be shown in a large national follow-up study soon to be published. The recurrence rate after ^{131}I therapy is insignificant, but the incidence of hypothyroidism is high. The present strong desire to minimize the incidence of hypothyroidism is leading to increased number of patients who need more than one treatment dose of ^{131}I. Efforts to titrate the dose so as to decrease the incidence of hypothyroidism following treatment prolong the recovery period to a euthyroid state, or result in an ineffective first course with another treatment required and even greater delay. The effect of the initial dose is uncertain for a period of approximately three months (although if the dose has been excessive, hypothyroidism may be apparent in a relatively few weeks). When two or more doses are required to treat the patient adequately, the total delay in achieving a euthyroid state may be quite undesirable for the patient. Patients who have been treated with ^{131}I bear no identification such as the scar of thyroidectomy, which serves forever to alert subsequent physicians that hypothyroidism should be kept in mind. It was shown many years ago in our own laboratory and has been confirmed in others that relatively small doses of ^{131}I, which did not seriously impair the function of animal thyroids, did impair subsequent replication of thyroid cells, so that normal replacement did not occur. It was thus predicted that most any dose which was adequate to reduce thyroid function in man even though it did not immediately destroy thyroid cells would ultimately result in thyroid failure because cells were not replaced. It is now clear that the majority of patients treated effectively with ^{131}I will ultimately become hypothyroid if they live long enough.

It is important that the treatment dose of ^{131}I should be given immediately after the uptake of the tracer is measured, for the size of that treatment dose is based on the uptake of the tracer. If the interval between measuring uptake and giving the treatment dose is long, as occasionally occurs as a result of delays in referrals, there is a possibiilty that the patient may ingest some iodine in the interim, as in cough medicine, etc. This will alter the uptake of the therapeutic dose when it is finally administered. Measuring the uptake of the treatment dose and its disappearance from the gland will show if the anticipated dose to the thyroid does not occur or if the thyroid does not behave as expected to the dose given.

The inability to see the histology of the thyroid, especially when nodules are present, is a disadvantage in the use of ^{131}I. Blind treatment of a nodular goiter with ^{131}I may leave an unsuspected carcinoma in place which may become manifest later. Fortunately in most cases with discrete firm masses the patients are electively treated by surgery rather than ^{131}I.

There are several favorable features to the use of subtotal thyroidectomy for hyperthyroidism. The hyperthyroidism is relatively promptly controlled with the use of antithyroid drugs followed by surgery in a few weeks. The remnant of the thyroid remaining after thyroidectomy is undamaged, and there is a normal replacement of cells in the remnant so that most patients remain in a euthyroid state indefinitely (11 percent hypothyroidism). There is an opportunity to examine histologically the tissue removed which is most important when nodules are present. The recurrence rate of properly performed subtotal thyroidectomy in Graves' disease is around three percent. Against surgery is the fact that the treatment requires hospitalization for four or five days. There is discomfort for two or three days, but the patient is euthyroid and back to work in ten days. These benefits are predicated on the assumption that the surgeon who performs the procedure has the necessary degree of technical competence. Damage to parathyroid glands and recurrent laryngeal nerves seldom if ever occurs in experienced hands.

In former times only iodine was available for preoperative preparation. This caused improvement in the degree of hyperthyroidism and greatly improved the surgical risk, but it did not bring all patients to a safe level for surgery. Since the availability of antithyroid drugs, the hyperthyroidism can be controlled in essentially all patients, unless the patient is allergic to all of the drugs. All patients should be reduced to a safe but not necessarily a completely euthyroid level at the time of surgery. In fact, patients take anesthesia better, recover more rapidly, and are up within 12 hours if there is still a modicum of thyrotoxicosis present at the time of surgery. If a patient has been treated for three or four weeks and shows no or only minimal improvement in the degree of thyrotoxicosis, then the dose of the drug is probably insufficient. There is considerable variation among patients in the dose of drug necessary to bring hyperthyroidism under control. It should be remembered that around 20 percent of patients require doses of more than 400 mg/day of propylthioracil and some need as much as 1000 mg/day. If there is any question whether the dose is sufficient in a given patient, that dose can be tested using a tracer of ^{131}I to measure uptake while it is known the patient is taking the drug regularly. If the uptake is reduced to 25 or 35 percent, the blocking effect of that dose of the drug is adequate. If there is any question about the result, potassium perchlorate will flush out the unbound iodide and give a more realistic measure of the amount of ^{131}I that is organically bound and that which is merely contained in the iodide trap. Propylthioracil is the preferred antithyroid drug because, for the doses used, it seems to cause fewer toxic reactions than most others.

Certain aspects of surgical technique require particular attention. The pyramidal lobe, which in any diffuse hypertrophy and particularly in Graves' disease is often found extending from the isthmus up to the thyroid bone, must be removed. If left in place, it may not only make an unsightly mass, an "Adam's apple," over the larynx, but may be an important factor in recurrence of hyperthyroidism. It is important to ligate the superior thyroid arteries above the gland and not to include thyroid tissue within the ligatures. Subsequent hyperthropy of such remnants may produce the appearance of "chipmunk pouches" or also may contribute to recurrent hyperthyroidism.

Surgeons learn to judge the optimal amount of thyroid tissue to leave behind by the gross appearance of the gland. If the thyroid is red and meaty and the individual is relatively young, an amount of tissue equal to the size of one's little finger nail should be left on each side of the trachea. If the patient is older, somewhat more is left. If there is a high degree of lymphocytic infiltration (some of which is common to all Graves' disease), which is recognized by a crumbly gray gland, considerably more than the usual amount of tissue should be left, for it is known that patients with extensive lymphocytic infiltration have a far greater tendency to become hypothyroid. The main trunk of the inferior thyroid artery should not be ligated as is sometimes done, for this contributes to hypothyroidism. Identification of both recurrent laryngeal nerves is an absolute requirement as is the identification of all four parathyroid glands.

With two definitive forms of therapy available (chronic use of antithyroid drugs seems to be only a temporizing measure), there seem to be some clear indications for each in various cases of hyperthyroidism. Surgery is the therapy of choice when hyperthyroidism is associated with nodules. Surgery here not only corrects the hyperthyroidism but permits removal and histological interpretation of the masses. It also permits specific identification of the tissue causing thyrotoxicosis during surgery. If it is toxic adenomatous goiter, in which case the adenomas are to blame, the adenomas are removed, and all extra nodular tissue is carefully preserved to avoid postoperative hypothyroidism. On the other hand, if it is Graves' disease with incidental adenomas, a generous bilateral subtotal thyroidectomy is performed to correct the hyperthyroidism as well as remove the tumors. The distinction between the two diseases can be best made at surgery if a tracer dose of ^{131}I is given before surgery. This permits identification of the hyperfunctioning tissue in the operating room by counting small samples of tissue removed as biopsies from nodules and from the extra nodular tissue during surgery, because preoperative scanning may not always distinguish between the two diseases.

Surgery is preferred in all children and young adults or any individuals who may have a long life expectancy. It is preferred for those in whom regular annual follow-up is not possible or is unlikely, so as to guard against ultimate hypothyroidism following ^{131}I therapy. Surgery is also recommended for those in whom the level of mental competency and understanding may result in a failure of the individual to recognize symptoms of hypothyroidism or myxdema in himself. Surgery is preferred in pregnancy for the sake of both mother and fetus. Thyroidectomy may be performed without risk to the fetus between the third and seventh months of pregnancy. If the diagnosis of hyperthyroidism is made after this date, the disease is controlled in a mildly hyperthyroid state with very careful supervision until after delivery of the fetus. We prefer the use of thyroidectomy in most women, who are still in the childbearing age.

Radioiodine therapy for hyperthyroidism is preferred in patients in the later decades of life or in younger persons where other concurrent disease shortens life expectancy or increases the surgical risk. Radioiodine is also preferred where the individual has great fear of surgery. It is preferred in older patients where the level of mental competency in the patient and his family assure that hypothyroidism will be watched for and that if thyroid medication is recommended it will be taken for life. All too often the patient becomes careless about taking thyroid supplement or wants to prove to himself that he does not need it within the first five to 15 years (when he may not yet be hypothyroid). Then later when he has forgotten his hyperthyroidism, he does not have a scar to make others think of hypothyroidism. He may then find his way into a nursing home or home for the aged because of what appears to be premature aging, depression or general deterioration, which is a manifestation of hypothyroidism.

SCHIZOPHRENIA, CEREAL GRAINS, AND CELIAC DISEASE

F. Curtis Dohan, M.D., *William Pepper Laboratory, Hospital of the University of Pennsylvania. Presented at the Delaware Biochemical Subsection of the American Chemical Society, January 15, 1973.*

Over a decade ago an internist, Dr. F. Curtis Dohan, discovered a clue to a possible pathogenic factor in schizophrenia. This clue developed out of an interest in the increased excretion of some indolic substances in the urine of schizophrenics. These indoles, of which some derivatives are psychotogenic, had been reported to be increased in the urine of patients with celiac disease. Thus began an investigation into the relationship of the two diseases, both of which probably are conditioned by polygenic inheritance.

Reports of cases studied by others were obtained.[1] In one series of 37 adult male schizophrenics four were found to have a history of celiac disease. There were four cases of celiac disease in another group of 100 childhood schizophrenics followed up 35 years later; and a third group of 97 schizophrenic children included four with celiac disease. This incidence far exceeds chance, for in the general population one in two or three thousand develops celiac disease. Since the psychic and bodily symptoms of celiac patients usually improve markedly on a gluten-free diet, this association of the two diseases suggested that the schizophrenic patients might also improve on a similar diet.

Histories of patients with celiac disease were also examined for evidence of schizophrenia. The records of one hospital showed one schizophrenic among 12 celiacs and a second with a schizophrenic daughter. In another study there were three schizophrenics among 32 celiacs, and in a third study one schizophrenic and one "schizoid" were found among 36 celiac patients. Another investigator reported that all 11 celiac patients who had received large doses of gliadin (the prolamine sub-fraction of gluten) became emotionally disturbed within hours and remained disturbed for a day or so. A celiac patient, in a study done for another purpose, was administered 30 gm of gluten (twice that of a normal daily diet) after being on a gluten-free diet; about three hours later she began hallucinating and became hyperactive and disturbed, then withdrawn. These findings are not isolated, for many other physicians have noted a rapid improvement in psychological symptoms of celiac patients after starting a gluten-free diet.

A second clue associating schizophrenia with cereal grain consumption was the decrease in admissions to mental hospitals noted during various wars. This decrease seemed to be associated with diminished food supplies, such as during the siege of Paris in 1870. In Leningrad during and after the World War II siege and attendant starvation there was the expected marked decrease in admissions to mental hospitals; however, the per cent reduction in schizophrenic admissions was twice that of all other psychiatric admissions. This encouraged a more definitive study of this relationship.[2] During World War II in Norway, Sweden, and Finland the admissions for schizophrenia were markedly reduced, but the admissions for "all other psychoses" increased. In Canada admissions decreased during the first three years of the war but increased thereafter, and in the United States admissions for schizophrenia and "all other psychoses" increased. There was no relationship of these changes in admissions for schizophrenia to the degree of unemployment, alcohol consumption, availability of mental hospital beds or doctors, or to the type of involvement in the war. However, there was the hypothesized strong correlation ($r = 0.96$, $P < 0.01$) with changes in wheat and rye consumption.

The association of schizophrenia and cereal grain consumption was then examined more directly. At the Veterans Administration Hospital in Coatesville, Pennsylvania, all the relapsed schizophrenic and non-schizophrenic psychiatric patients sent to one locked ward were given, randomly, either a totally cereal-grain-free, milk-free diet or a diet somewhat high in cereal grains. Milk was omitted from the experimental diet because some celiacs are made worse by milk proteins. Those schizophrenic patients on the cereal-free, milk-free diet were released from the locked wards in about half the time taken by the schizophrenics on the high cereal-grain diet. The non-schizophrenics showed no difference in release rate from the locked ward. When gluten was then added to the cereal-free, milk-free diet, secretly, the difference in release rates from the locked ward completely disappeared.[3] The rates of discharge from the hospital of those patients on the two diets are also indicative. After 90 days, 22 of 59 relapsed schizophrenics on the cereal-free, milk-free diet were discharged versus only 9 of 56 on the high-cereal diet ($P < 0.01$).[4]

The genetically determined mechanism of the detrimental effect of the gluten proteins in celiac disease remains unknown. However, the possibility of incomplete digestion of a toxic polypeptide (due to inherited enzyme activity of the epithelial cells of the small intestine) and an abnormal immunological response to the gluten-like proteins has been proposed. These possibilities also deserve attention in relation to schizophrenia since there is a substantial pre-World War II literature indicating that schizophrenics were subject to metabolic and pathologic changes similar to those found in celiac patients.

Dr. Dohan feels that the findings to date amply warrant carefully controlled studies by other investigators of the effects of cereal grain proteins on schizophrenics.

J. Donoho

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3. Dohan FC, Grasberger JC, Lowell F, et al: Relapsed schizophrenia: More rapid improvement on a milk and cereal-free diet. Brit J Psychiat 115:595-596, 1969.
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In Brief

Speakers on "Ask the Doctor"

Speakers for November, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: November 6, *Jules S. Levin, M.D.*, Cataracts; November 13, *Janet Kramer, M.D.*, Adolescent Medicine; November 20, *Robert Waterhouse, M.D.*, Hysterectomy; November 27, *John F. Gehret, M.D.*, Tubal Ligation.

In The News

At their October 18th meeting, the American College of Surgeons bestowed the distinction of "fellow" on the following Delaware physicians: *Orville Keith Hamilton, M.D.*, Dover, *Zakir Hossain, M.D.* and *Alvin Weiner, M.D.*, Wilmington. Fellowship, a degree entitling the recipient to the designation of "F.A.C.S." following the physician's name, is awarded to those surgeons who fulfill comprehensive requirements of acceptable medical education and advanced training as specialists in one of the branches of surgery, and who give evidence of good moral character and ethical practice.

Joel R. Temple, M.D., has been appointed to the Board of Directors of the Kent County Heart Association.

Maynard H. Mires, M.D., has been appointed state health officer in New Hampshire. Doctor Mires will be leaving his present positions as Director of Local Health Services for the State of Delaware and Kent County Health Officer. Mrs. Mires has been active in the Kent County Woman's Auxiliary. Doctor Mires was one of three Masons in the state on whom the 33rd degree was recently conferred. The 33rd degree, highest honor of Scottish Rite Freemasonry, is awarded for outstanding service to humanity, reflecting credit on the fraternity.

William A. Wright, M.D., was listed on the Honor Roll of physicians who have participated in the Volunteer Physicians for Viet Nam (VPVN) Program of the American Medical Association. He was Delaware's only volunteer in the nine-year program, which terminated last July. A total of 743 physicians served 940 tours since the inception of the program in 1965.

Diabetes Week

November 11-17 is Diabetes Week. Diabetes in this country is ranked as the fifth leading cause of death by disease and the second leading cause of new cases of blindness. It is the year-round effort of the American Diabetes Association to help find unknown diabetics. It is the hope of the American Diabetes Association that during Diabetes Week, every physician will test for diabetes each of the patients he sees. Contact the Delaware Diabetes Association (656-0030) for information as to how you can help this cause. Pamphlets are available for distribution in your office waiting room.

Malignant Melanoma Study

The cooperation of physicians is requested in the referral of patients with malignant melanoma for studies being conducted jointly by the National Cancer Institute and the National Institutes of Health. The purpose of this study is to evaluate the effects of chemotherapy and immunotherapy in patients with malignant melanoma. Needed are patients with Stage III disease (ie, clinical evidence for systemic metastasis), and Stage II disease (ie, clinical evidence for regional draining lymph node metastasis). Physicians interested in having their patients considered for admission to these studies may write or telephone: Richard I. Fisher, M.D., Immunology Branch, National Cancer Institute, National Institutes of Health, Building 10, Room 4B17, Bethesda, Maryland, 20014. Telephone: (301) 496-2455.

CLINICAL NOTICES AND MEETINGS

Immunology and Allergy

The annual meeting of the American Association for Clinical Immunology and Allergy will be held at the Hilton Palacio Del Rio Hotel, San Antonio, Texas, November 29-December 2. For information contact Robert J. Brennan, M.D., President-Elect, American Association for Clinical Immunology and Allergy, 3471 North Federal Highway, Ft. Lauderdale, Florida, 33306.

Cardiac Course

A postgraduate course entitled "Ventricular Function — A Practical Workshop," will be held in Santa Barbara, California, November 30-December 1. This course is sponsored by the American College of Chest Physicians and the Santa Barbara Heart and Lung Institute. Topics of discussion and training will include the rapid changes in cardiac catheterization techniques and methods of evaluation. For information contact the Director of Continuing Education, American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois, 60611.

Perinatal Course

The Department of Pediatrics of the University of Miami School of Medicine, in cooperation with Ross Laboratories, is presenting a symposium in Perinatology, December 7-8, at the Mailman Center for Child Development, University of Miami School of Medicine. For information write to Eduardo Bancalari, M.D., Assistant Professor, Department of Pediatrics and Director of Newborn Center, University of Miami School of Medicine, P.O. Box 875, Biscayne Annex, Miami, Florida, 33152.

Cancer Symposium

The Vincent T. Lombardi Cancer Research Center of the Georgetown University School of Medicine will sponsor a one-day program entitled "The Successfully Treated Cancer Patient — New Problems and Challenges." The symposium will be held January 18, 1974 in the Basic Sciences Building, Georgetown University School of Medicine, Washington, D.C. For information write: Lombardi Cancer Symposium, Room 1301, Georgetown University School of Medicine, 3800 Reservoir Road, N.W., Washington, D.C., 20007.

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FAT EMBOLISM

Pathogenesis and Proposed Protocol for Monitoring and Treatment

Joseph J. Schulz, M.D.
Michael B. Peters, M.D.

In the past three years we have seen several cases of trauma complicated by the clinical syndrome of fat embolus and have noted variety in both symptomatology and treatment regimens. A recent fatal case stimulated us to review the theories of pathogenesis and pathophysiology and the various therapeutic modalities. From this review we have developed a diagnostic and therapeutic protocol which may facilitate data collection and uniformity of therapy.

Case Presentation

A 38-year-old man was thrown 100 feet from an automobile eight hours prior to his admission. He was evaluated at another hospital, where x-rays revealed a subtrochanteric fracture of the right femur and an undisplaced fracture of the right pubis plus multiple contusions and abrasions. There was no significant head trauma, and the patient had been alert and oriented since the time of his injury with no history of unconsciousness. He was subsequently transferred to the Delaware Division of the Wilmington Medical Center and placed in skeletal traction.

Thirty-eight hours after injury the patient developed fever of 38.5°C. Simultaneously he was noted to be tachypneic, cyanotic, and disoriented. His blood pressure was 120/70, pulse 120 and regular, and respiration 40/minute. There were multiple petechiae in both axilla and the left palpebral conjunctiva and bilateral inspiratory fine rales with sibilant expiratory ronchi. Electrocardiogram showed a sinus tachycardia with an incomplete right bundle branch block. Chest x-ray revealed bilateral fluffy alveolar infiltrates. Arterial blood gases on room air revealed severe anoxia with pO_2 26mm Hg, pCO_2 24mm Hg, HCO_3 20 mEq per liter, O_2 saturation 60% and pH 7.54. Urinalysis was positive for fat globules; serum lipase was elevated to 4.5 (normal less than 2.0). Platelet count was 90,000/cu mm. Despite aggressive treatment with tracheostomy, controlled ventilation, intravenous alcohol and steroids the patient became obtunded, oliguric, and hypotensive and died 72 hours post injury.

Incidence

Fat embolism appears to be a fairly common complication of long bone fractures, usu-

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Dr. Schulz was formerly a medical resident at the Wilmington Medical Center. He is currently engaged in cancer research in the Oncology Department, Medical College of Virginia at Richmond.

Dr. Peters is a chief medical resident at the Wilmington Medical Center.

This paper was awarded the second annual prize for the best article by a house officer accepted by or published in the *Delaware Medical Journal*.

ally occurring within the first 72 hours post injury. The true incidence of post traumatic fat embolism is very difficult to ascertain. If one accepts Fuchsig's data that 849 out of 5,265 autopsy records of patients dying from trauma had fat emboli to the extent that it could be listed as the primary or secondary cause of death,[1] then the incidence would be around 16%. Saldeen found the frequency to be 24% in his series.[2] Everts in a review found the incidence of fat embolism to range from as high as 80% to as low as 1%.[3] The incidence of fat embolism is undoubtedly much higher than is appreciated even though only 0.8% to 6.0% of patients with severe trauma will develop the classic clinical fat embolism syndrome.[4]

The clinical syndrome can occur at any time after significant trauma, usually involving fractures of the long bones, pelvis, or vertebrae. The signs and symptoms typically develop within 72 hours but may be delayed as much as four to five days, or may occur during manipulation of fracture sites.

Diagnosis

Fat embolism is strongly suspect in a patient with long bone or pelvic fracture with the appearance of tachypnea, dyspnea, disturbances of consciousness, and petechial hemorrhages, particularly in the axillary area, palpebral conjunctivae, and over the trunk.

The most important laboratory test is measurement of the arterial blood gases which usually reveals a marked anoxemia. Thrombocytopenia, elevation of serum lipase, lipuria, right axis shift on the ECG, and a chest x-ray showing fluffy alveolar infiltrates provide laboratory support for the diagnosis.

Pathogenesis

There are two theories of pathogenesis of how fat arrives in the vascular system. The first, the mechanical or "intravesation" theory, was proposed in 1924 by Gauss, who believed bone veins held open by a rigid perivascular sheath afford ample portal to bone marrow fat loosened by local tissue trauma.[5] Support for this is found as early as 1866 when Busch described the appearance of a colored marrow oil in the lungs after fracture of the bone previously prepared by injection of colored oil into the marrow cavity.[6] Bone marrow emboli in the lung after long bone fracture have been demonstrated by several investigators obviating the origin.[3,7,8] Furthermore, the use of a tourniquet has been shown to decrease the amount of fat embolism after fracture in animal models.[9]

Although simple "intravesation" clearly does occur, several findings unexplained by the mechanical theory led to the development of an alternate, perhaps supplementary, physiochemical theory. Fat embolus has been reported in states other than long bone fracture, eg, alcoholism,[10] burns,[11] infections,[12] sickle cell crisis,[13] renal transplantation,[14] external cardiac massage,[15] steroid induced fatty liver,[16] and others.[17] Simple intravesation cannot explain the appearance of systemic fat emboli although pulmonary arteriovenous shunting and shunting through a patent foramen ovale have been offered in explanation.[17] Warthin[18] in 1900 and Lehman and Moore[19] in 1927 demonstrated the amount of fat in the lung and fat embolus to be greater than the amount present in the fractured long bone. This work has been challenged recently by Peltier, who noted that only the fat in the diaphyseal shaft had been measured while he found the major amount of bone fat in the metaphyseal sponge.[20] Finally, Hillman and Lequire showed the cholesterol content in embolic fat to be ten times that in bone marrow fat.[21] The physiochemical theory of pathogenesis thus states that trauma and tissue injury somehow alter the natural emulsion of circulating fats so that coalescence may occur.[12,19,22] This produces large fat droplets that act as emboli.

Pathophysiology

The pathophysiology of fat embolism seems somewhat more complex simply from the number of proposed explanations. None of these is exclusive and, again, the theories may prove to be additive. Bone marrow fat is almost entirely neutral fat, unsaturated fatty acids comprising 65-80% of the constituent acids.[23] It is generally appreciated, however, that in experimental animal models large amounts of neutral fat administered intravenously are well tolerated.[24] The explanations offered to account for the rather dramatic clinical syndrome of fat embolus invoke either physiomechanical or chemical mechanisms.

The physiomechanical theory is a mass theory which holds that, although the mass of fat in bone is not enough to cause injury, a lethal quantity may be achieved by recruitment of normally dispersed fat into globules. Recently Saldeen has documented cases in which death undoubtedly was due simply to the mass of the embolus.[3] An alternative physiomechanical theory is that proposed by Sevitt, who believed the pulmonary dysfunction to be secondary to cerebral fat emboli and subsequent neurogenic pulmonary edema.[17] Certainly this may contribute, but not infrequently the clinical picture of fat embolus is manifest without evidence of cerebral embolus at autopsy.[4]

More recently, the chemical theory has come into favor, and extensions and refinements of this theory are occurring at a rapid rate. Basically, its proponents hold that embolic fat, regardless of origin, undergoes secondary changes which produce highly toxic free fatty acids (FFA) which cause tissue damage. It is proposed that FFA formation is secondary to catecholamine-induced lipase action on either or both depot fat[25,26] or embolic fat.[24]

Free fatty acids are lethal at one tenth the dosage of neutral fat;[27] and while sudden death from neutral fat is due to cardiovascular failure without extreme exudation into the alveolar spaces, FFA produce respiratory and cerebral symptoms with histopathologic changes identical to those seen in clinical fat embolus at autopsy.[23]

The exact mechanism of FFA toxicity is uncertain. Early explanations employed displacement of lipoproteins or calcium from cell junctions, but the evidence for this is not overwhelming.[27] The demonstration of increased serum lipase activity during pathologic fat embolus suggests that hydrolysis of embolic fat is occurring. Recently Fonte and Hausberger were able to demonstrate a linear relationship between FFA and lipase concentration in the lungs of female Wistar rats injected with neutral fat, suggesting FFA are liberated from embolic fat by enzymatic hydrolysis.[24] However, the concentrations found were 100 times less than the concentrations necessary to produce the pulmonary lesions using FFA alone. They postulated that toxic concentrations are achieved at the site of hydrolysis — the embolus capillary wall interface.

In a recent review Herndon summarizes the pathologic events as follows:[28] FFA result in toxic disruption of the alveolar capillary membrane. Neutral fats and FFA comprise surface active properties resulting in edema, hemorrhage, and alveolar collapse, which by producing a mechanical block results in increased arteriovenous shunting. Peltier, noting the frequent thrombocytopenia, proposed pulmonary platelet sequestration which could further compromise ventilatory function through the release of vasoactive amines.[29]

There is now good experimental evidence to explain pulmonary platelet sequestration. Hoak has demonstrated a strong thrombogenic effect of FFA in their ability to produce platelet aggregation.[30] The effect is not inhibited by heparin in concentrations as high as 6 units/cc of plasma. The effect is inhibited by albumin, reflecting its capacity to find fatty acids.

Referring to Goodman's work, [31] Hoak calculated that at plasma albumin concentrations of 4 gm%, saturation of the albumin-binding sites occurs at FFA concentrations of 1150 to 1200 mEq per liter. Baker has presented data in evidence that these concentrations are reached in clinical fat embolus.[25] Furthermore, if Fonte's theory that lipolysis is greatest at the embolus capillary wall interface is correct,[24] local FFA concentrations may indeed provide a powerful impetus to platelet aggregation, vascular compromise, vasoactive amine release, and subsequent compromise of pulmonary function. This carries significant therapeutic implications. Heparin does not appear to inhibit FFA-induced platelet aggregation and indeed may accelerate the process by activating lipoprotein lipase, thereby increasing FFA concentrations. Steroids have also been known to induce hypercoagulable states associated with increased FFA concentrations[32] although this effect is indirect and may be delayed.

A further step in the chemical theory, a revival of mechanisms proposed by Bergentz in 1961,[33] is illustrated by Bradford's demonstration that coagulation abnormalities are frequent in fat embolism and seem to reflect episodes of intravascular coagulation and fibrinolysis, primarily restricted to the pulmonary vasculature.[34] This idea seems highly tenable, since in the clinical syndrome of fat embolus there are two potential stimuli for coagulation: tissue thromboplastin release secondary to trauma and high FFA concentrations having a direct platelet aggregating effect,[30] and enhancing ADP and thrombin-induced platelet aggregation[35,36] and activating factors XI[37] and XII.[38]

Saldeen added support to this theory by demonstrating increased fibrin deposition in the pulmonary vasculature in animal models of fat embolus.[3] The process might be further accelerated by hypoxia and acidosis,[39] adding another impetus to intravascular coagulation. Substantial evidence that pulmonary intravascular coagulation plays an important part in the pathophysiology of fat embolus is Saldeen's demonstration that the morphologic changes produced by fat embolus and by thromboplastin are identical after 24 hours, and furthermore, that these changes are not produced by fat preheated to destroy tissue thromboplastin.[40]

The most recent extension of the chemical theory is Saldeen's discovery of a marked increase in the concentration of inhibitors to plasminogen activators in several patients dying from embolus.[41] These cases were associated with marked fibrin deposition in the pulmonary vasculature. It is suggested that this late inhibition of the fibrinolytic system might explain the latency in clinical symptoms after fat embolism. By way of summary the various theories of pathogenesis and pathophysiology are presented in Figure 1.

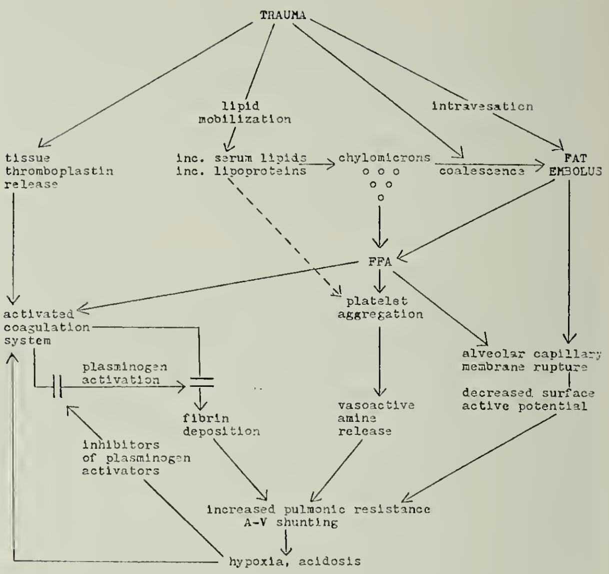

FIGURE 1

Pathogenesis and Pathophysiology of Fat Embolism

Treatment

A number of treatment regimens for fat embolus have been proposed, each having experimental evidence both for and against its efficacy. The use of Dextran 40 (*Cutter*) has been advocated[12,22] because of its ability to alter the surface charge of erythrocytes, thereby preventing sludging, plus its ability to reduce platelet adhesiveness, thereby preventing the formation of microthrombi.[42–44] Except for the potential of volume overload and the remote possibility of bleeding into fracture sites, Dextran appears to have little potential for adverse effects. Several authors feel the same is true for its beneficial effects.[44,45]

Intravenous steroids would appear to be useful by preventing the inflammatory response to free fatty acids and may also play some role in the treatment of cerebral edema secondary to fat emboli.[46] These advantages seem to outweigh the potential of steroid-induced hypercoagulability, but this is still being questioned.[44] Intravenous alcohol has been advocated because it is an effective inhibitor of lipase and should impede lipolysis of neutral fat to free acids preventing their initiation of tissue damage.[47] That this antilipolytic effect has clinical significance remains open to question.[4,18]

By halting intravascular coagulation, heparin should prevent the deposition of fibrin in the pulmonary vasculature. The best results, however, have been in experimental animals pretreated with heparin before fracture.[40] It has been noted above that heparin increases FFA concentrations and cannot inhibit FFA-induced platelet aggregation. This theoretical conflict is borne out in the controversy over its clinical usefulness.[4]

It cannot be overstated that the mainstay of therapy is still supportive treatment. Maintenance of the pO_2 between 60-80 mm Hg, treatment of shock, maintenance of adequate urinary output, and prevention of infection are still the basic modes of attack.

Recently the use of hypothermia and alpha adrenergic blockage plus intravenous Dextran has been advocated for use in patients who have remained hypoxic at normal or elevated body temperatures.[48,49] The use of albumin infusions[21] to bind free fatty acids and the use of clofibrate to prevent post-traumatic lipemia[10] have their basis in experimental models, but their clinical benefit remains to be determined.

Protocol for Diagnosis and Therapy

The Mayo Clinic hospitals are currently using a protocol approach to monitoring trauma patients with the hope that this will facilitate recognition of the syndrome of fat embolus.[50] Ongoing studies at Detroit General Hospital suggest that subclinical fat embolus occurs with alarming frequency in patients with long bone fracture.[51] It is these patients we would like to identify early for therapeutic purposes in an effort to decrease the morbidity and mortality.

Having reviewed some of the controversies, we would like to propose our protocol for the monitoring of trauma patients to aid early recognition of the syndrome and also a regimen for therapy that may provide more benefit then harm.

Not all readers will agree with our protocol and treatment regimen as data is available both for and against many of the modalities presented. However, a standard for both monitoring and treatment will provide valuable information which can be used both prospectively and retrospectively to form more sound conclusions.

PROTOCOL FOR MONITORING AND TREATMENT OF FAT EMBOLISM IN PATIENTS WITH MULTIPLE TRAUMA OR LONG BONE FRACTURES

A. Daily parameters for first three days of hospitalization

1. Physical exam including the following:
    a. Cutaneous and conjunctival exam for petechiae
    b. Funduscopic examination
    c. Chest examination
    d. Neurological examination with special attention to level of consciousness and orientation
2. Arterial blood gases
3. Hgb, Hct, platelet count
4. Prothrombin time and thrombin time — if normal, a and b
    a. Fibrin split products
    b. 3P test (plasma protamine paracoagulation test)
5. Serum lipase
6. Urine examination for fat
7. EKG on day one (and on day three unless indicated more frequently)
8. Chest x-ray on day one (and on day three unless indicated more frequently)

B. Treatment

1. Restore arterial oxygenation to pO_2 60 — 80 mm Hg utilizing the following methods as needed:
    a. Mask oxygen
    b. Endotracheal tube
    c. Tracheostomy
    d. Ventilatory assist
    e. Controlled ventilation
    f. Positive end-expiratory pressure (PEEP) breathing
2. Establish good urinary output (at least 50 cc/hour)

  - a. Routine monitoring of central venous pressure or pulmonary artery wedge pressure
  - b. Intravenous furosemide or mannitol if needed

3. Steroids
   - a. 500 mgm hydrocortisone or its equivalent intravenously every six hours for 72 hours, then stop without tapering

4. Dextran 40
   - a. 500 cc Dextran 40 intravenously daily for five days

5. Heparin
   - a. If "three P" test is positive, 5000 units heparin I.V. every six hours to be monitored by daily whole blood PTT or activated PTT only to prevent overcoagulation

6. Hypothermia to 35°C
   - a. If hypoxia cannot be reversed with controlled ventilation and PEEP or if mental obtundation persists despite restoration of arterial pO_2

Summary

Fat embolus following trauma or long bone fracture is common and may be lethal.

A fatal case has been presented, and the diagnosis and theories of pathogenesis and pathophysiology have been reviewed.

A protocol has been outlined to increase clinical recognition and provide standardized treatment according to need.

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CEREBRAL VASCULITIS PRESENTING AS A MENINGOENCEPHALITIS

A Case of Systemic Lupus Erythematosus

This paper reports a nonlocalized meningoencephalitic syndrome presented terminally by a patient with systemic lupus erythematosus. The neuropathological findings of this case are discussed briefly and compared with previous neuropathological reports.

Oscar S. M. Marin, M.D.
Bruno V. Estanol, M.D.

The nervous manifestations of systemic lupus erythematosus (SLE) are manifold. The central nervous system is affected in about 75% of the patients, and it has been estimated that the peripheral nervous system is affected in approximately 8%.[1] Seizures, cranial nerve disorders, and mental disturbances are particularly common. Hemiparesis, paraparesis, movement disorders, and autonomic dysfunction may also occur. Indeed, the pleomorphic manifestations may even mimic a demyelinating disorder.[2] Libman and Sacks described four patients with nuchal rigidity and convulsions,[3] and Harvey described some patients with neck stiffness and diffuse encephalopathy,[4] but no histopathological reports were available in those cases. Vejjajiva reported in 1965 the case of a 31-year-old woman who presented with a febrile illness with marked neck rigidity and Kernig's sign.[5] An elevated CFS protein was found with few lymphocytes, and the diagnosis of SLE was made on the basis of LE cells present on the peripheral smear. The patient ultimately recovered following treatment with adrenocorticosteroids.

We are reporting a case in which a patient known to have systemic lupus erythematosus developed a neurological picture consistent with a meningoencephalitis with no permanent focal neurological signs. The gross and histopathological studies disclosed a diffuse vasculitis of the brain parenchyma and vessels of the leptomenings.

Case Report*

A 31-year-old black female presented complaining of low grade fever for the past six months, generalized weakness, and general malaise.

Two years prior to this admission she was seen with a three-year history of migrating joint pain, intermittent fever, general malaise, and a rash over the shoulder. She had a fever of 37.8°C and complained of abdominal pain. The latex fixation test was weakly positive, and an elevation of gamma globulin was present by serum protein electrophoresis. The erythrocyte sedimentation rate was 120 mm in one hour. Antinuclear antibodies were positive on two determinations. She improved with prednisone treatment and was discharged. In June, 1971, she was readmitted complaining of joint pain, fever, and hematuria. She had marked albuminuria and a BUN of 48 mg/100 ml. Laboratory examina-

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Dr. Marin, Chief of Neurology, Baltimore City Hospitals, was formerly Program Director, Section of Neurology, Wilmington Medical Center.

Dr. Estanol is a resident in neurology, Baltimore City Hospitals.

*This case was seen and studied at Wilmington Medical Center, Delaware Division.

tion showed a moderate anemia. Serum complement C_3 was 146 mg (normal 90-150 mg). Antinuclear antibodies were positive. Erythocyte sedimentation rate was 87 mm in one hour. A diagnosis of lupus nephritis was made. The patient was given prednisone, 80 mg daily, with marked clinical improvement and a fall of the BUN to 16 mg/100 ml. The patient was followed in the Medical Clinic where her dose of prednisone was decreased to 5 mg every other day. She developed a pleural effusion, which cleared in three weeks.

At the time of the present admission she presented with a history of fever, general malaise, and a 20-pound weight loss over the past two months.

The temperature was 41°C; pulse, 160 and regular; blood pressure, 114/80; respirations, 20. She appeared toxic and was diaphoretic. On admission the neck was supple. A mild pharyngitis was present. There was evidence of erythematous lesions around both nipples and over the external surfaces of the arms. No lymphadenopathy was found. Auscultation of the heart demonstrated a presystolic gallop (S_4). The abdomen was soft without masses. Bilateral swelling of the eyelids was present. Neurological examination on admission disclosed that she was alert, cooperative, and oriented. Cranial nerves, motor system, coordination, and all sensory modalities were normal. Deep tendon reflexes were symmetrically present, and both plantar responses were flexor. Erythrocyte sedimentation rate was 112 mm per hour. Prednisone 80 mg daily was given with a transient drop of the temperature, but after 48 hours the patient became febrile again with a temperature of 39°C. On the fifth hospital day she became stuporous. She did not respond to verbal commands. Although she kept her eyes open, she would not blink with hand threatening. With painful stimulation she withdrew the four extremities. Increased tone of the Gegenhalten type was present in the four extremities. Marked stiffness of the neck and Kernig's sign were present. Her pupils were equal and reacted to light, and her ear drums were normal. Her fundi showed venous engorgement with hyperemia of both optic discs. Her gaze was straight ahead, and she had full oculocephalic responses. Deep tendon reflexes were symmetrically present, and plantar responses were flexor. Spinal tap showed an opening pressure of 290 mm of water; protein was 338 mg/100 ml and glucose, 32 mg/100 ml (simultaneous blood sugar, 89 mg/100 ml) with 10 lymphocytes. Gram stain, India ink preparation, and AFB stain were negative. Cultures for bacteria and fungi were negative at 72 hours.

On the ninth hospital day she had a seizure starting in the left arm which rapidly became generalized. Her temperature remained elevated at 41°C. She had a generalized grand mal seizure a few hours later. After the last seizure she was provided with assisted ventilation. She died on the eleventh hospital day.

Laboratory data: Hematocrit was 33%, WBC 5000 with 47% neutrophils, 48% lymphocytes, and 7% bands; SGOT was 775 units, LDH 1650, and CPK 4740; EEG showed diffuse slowing of medium voltage. Brain scan was normal. EKG demonstrated right axis deviation, low voltage, and nonspecific myocardia abnormalities. Chest x-ray showed cardiomegaly; LE preparation was negative. Complement C_3 was 22 mg (normal 90-150). Immunoglobulin electrophoresis revealed:

IgG 3060 mg (normal 770-1130 mg/100 ml)
IgM 170 mg (normal 90-170 mg/100 ml)
IgA 380 mg (normal 80-200 mg/100 ml)

Neuropathological Findings

The brain weighed 1300 grams. There was moderate brain edema with flattening of the convolutions. On the left frontal lobe some clouding of the leptomeninges was noted with tense fluid inside. There was no evidence of temporal or tonsillar herniation. The configuration of the vessels of the Circle of Willis appeared normal. The brain was then sectioned in successive coronal fashion. At the junction between white and gray matter there were occasional isolated punctuate hemorrhages of a diameter of 1 mm or less.

Microscopic Examination

The lesions were confined to the leptomeninges and leptomeningeal blood vessels, capillaries, arterioles, and venules of the brain parenchyma. In the leptomeninges there was an increased diffuse infiltrate consisting primarily of polynuclears with fewer lymphocytes or plasma cells. The most outstanding changes were observed, however, in the proximity of the venules and some arterioles; the walls of these vessels were necrotic, strongly PAS positive, and seeded by residuals of nuclear material. (Figure 1) The necrosis affected the endothelial cells of the leptomeninges themselves, in no direct contiguity with the blood vessels. (Figure 2) The necrotic process was patchy, leaving some other venules and particularly some arterioles quite intact. PAS positive finely granulous material could occasionally be found in the lumen of the venules and small vessels. In the nervous parenchyma itself and affecting the cerebral cortex, subcortical white and gray matter, brain stem at all levels, and cerebellum, there were patchy infiltration of the Virchow-Robin spaces and necrotic lesions of small arteries and veins. (Figure 3) In some areas of the white matter of the cerebral hemispheres, the capillaries appeared dilated and filled by slightly PAS positive proteinaceous material. In other loci the prominence of the capillaries resulted from the widening of the perivascular spaces and shrinkage of the vessel walls themselves. There was little or no endothelial proliferation. The age of the lesions appeared to be recent and fairly similar throughout. Ependymal cells were intact, and only a few of the blood vessels of the choroidal plexuses were affected by the necrotic lesions.

In summary, the findings were those of an acute necrotic vasculitis of the leptomeninges and cerebral capillaries and venules. The general autopsy disclosed evidence of a myocarditis, pericarditis, "onion skin" lesions of the spleen, and a diffuse proliferative glomerulonephritis of the kidney with typical "wire loop" lesions.

Discussion

Although the development of cerebral symptoms in SLE has been regarded as ominous because they are commonly observed before death, there are some reports in which the neurological manifestations were the first to be observed and from which the patients recovered fully.[5] It appears then that the effect of SLE on the nervous system is varied not only in its clinical signs, but also in its clinical course.

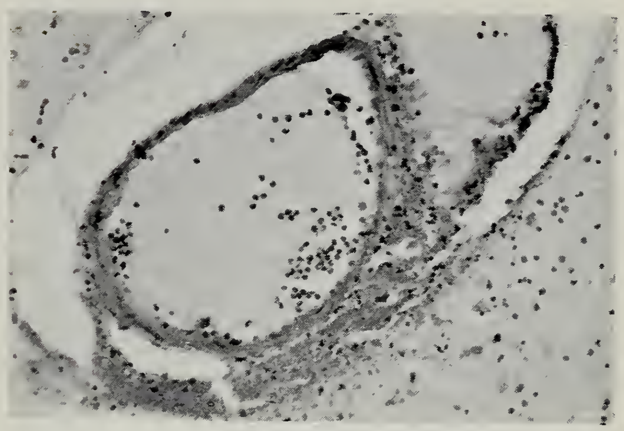

FIGURE 1

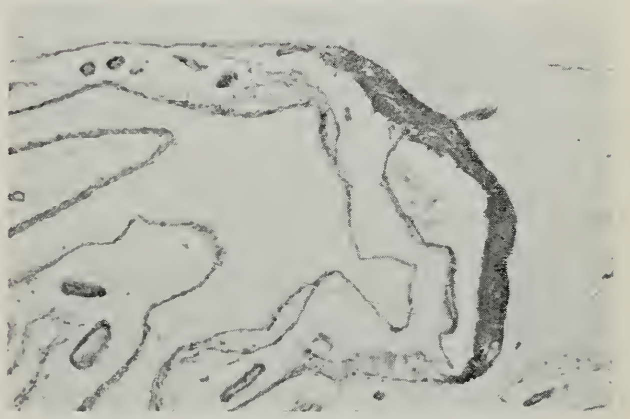

FIGURE 2

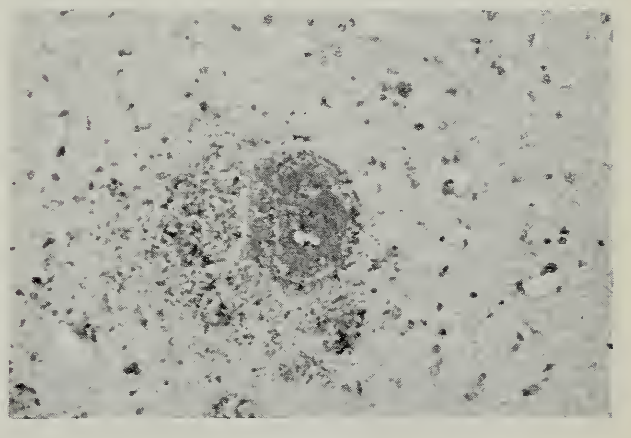

FIGURE 3

In this particular patient the neurological manifestations were terminal and heralded her death. Although in most cases there are single or multiple focal neurological deficits, in our case no focal neurological signs were found on the physical examination. The focal seizure with secondary generalization was the single focal neurological abnormality and appeared on the ninth day in an already fully developed meningeal syndrome. The disease was principally characterized by the impairment of consciousness and typical meningeal signs. Recent reviews of the neurological manifestations of SLE do not mention the existence of pure meningoencephalitic syndromes;[2,6] meningeal syndrome when present is usually accompanied with various other focal and steady neurological deficits. Dubois made brief mention of cases with myalgia and meningismus that were erroneously admitted to the contagious disease divisions.[6] However, clinical signs of meningeal irritation were absent in the case that illustrates this point. The CSF glusose in our case was low, and the fact that the patient was receiving prednisone treatment obliged us to consider the diagnosis of infection of the leptomeninges. In particular, Harvey et al,[4] Dubois,[6] and Pariser et al[7] have described the presence of cryptococcal meningoencephalitis in cases of SLE. Low cerebrospinal fluid sugar is characteristic of bacterial, tuberculous, and fungal meningitis. It has been found similarly low in cases of subarachnoid hemorrhage, certain viral infections, central nervous system sarcoidosis, and neoplastic meningeal infiltrations.[8] It is interesting that our case with a diffuse necrotizing arteritis and no subarachnoid bleeding also showed a low CSF glucose, a finding which has apparently not been previously reported. The elevated CSF pressure was indicative of increased intracranial pressure, probably reflecting diffuse cerebral edema. The CSF protein is in accord with the report of others. Johnson et al[1] have stated that 48% of the cases with SLE with CNS involvement had an elevated CSF protein, and in the case of Vejjajiva, which is similar in several respects to our own, the protein was 705 mg/100 ml without pleocytosis.[5] The electroencephalographic findings of diffuse bilateral slow waves were also nonspecific.

The elevated CPK and LDH as well as the tachycardia were the result of the myocarditis. The low serum complement C_3 was probably due to the renal involvement. In regard to the effect of steroid treatment, there was no improvement whatsoever, and the patient deteriorated rapidly despite the massive administration of prednisone.

The pathological study of this case showed a diffuse affection of the venules and arterioles of the leptomeninges and brain parenchyma with infiltration of predominantly polynuclear cells in the Virchow-Robin spaces, necrosis of the walls of the vessels, and deposition of a PAS positive material inside and around the blood vessels.

Neuropathological findings in cases of SLE have been reported on many occasions. The macroscopic abnormalities include massive intracerebral hemorrhages, multiple small hemorrhages, and foci of ischemic infarctions. There are less unity and regularity in the pathological findings in nervous blood vessels. In a few cases there are signs of inflammatory reaction around and in the vessel walls, giving correct justification to naming the process arteritis or vasculitis. More often, however, the lesion with scanty inflammatory reaction tends to be predominantly necrotic. As in our case, the lesions affect all the vascular layers from the endothelium to the very thin adventitia. Fibrinoid PAS positive necrosis constitutes then an outstanding pathological change. Proliferative reactions of the endothelium are variable in their severity from case to case. As noted before, such proliferative changes hardly correlate with the neurological clinical symptomatology as they do clearly in the case of necrotic ones.[1] The presence of proliferative endothelium in cases where the lesions also have necrotic characteristics may depend strongly on temporal factors; time is necessary for the multiplication of cells to occur. Proliferation in our case was quite limited, probably because of the acute nature of the lesion and the short survival following the onset of neurological symptoms. Occlusion of the vascular lumen with fibrin thrombi is known to occur. In our case, large and middle-sized vessels were free of occlusion. PAS positive proteinaceous material filled and distended the capillaries of some regions.

Some few arterioles of the same affected areas were also filled. (Figure 4) The microscopic characteristics of the occlusive material rather recall those encountered in cases of thrombotic thrombocytopenic purpura which frequently complicates SLE, particularly at brain level.[9] In that condition the proliferation of endothelial cells seems to constitute a prominent feature not observed in our patient. It would seem unlikely that this kind of intraluminal material is in any way a specific feature. One possible simple explanation is that it results from accumulation of plasmatic proteins due to stasis and was secondary to the predominantly venous involvement of our case. In fact, distended capillaries were a typically patchy phenomenon present in all vessels in certain areas and totally absent in others, suggesting a vascular pattern of distribution.

Of interest in our case is the fact that the lesions were not confined to the vessels, but that they also affected and originated necrosis of the leptomeningeal cells themselves. Mesothelial cells of pericardium, pleura, and peritoneum are known to be involved in SLE, so these findings although heretofore unreported in leptomesothelial cells are hardly unexpected.

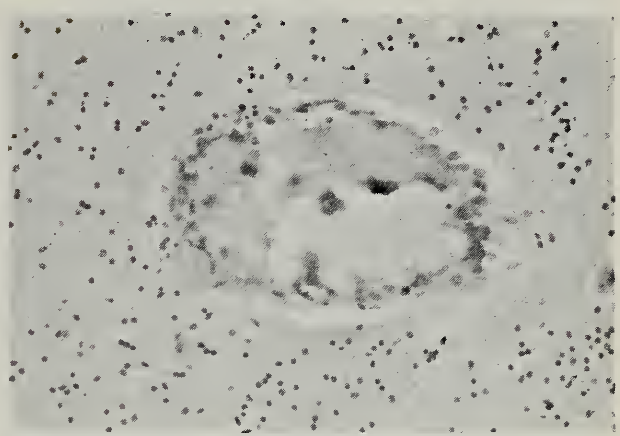

FIGURE 4

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* * *

SPARE THE HEROICS

Sir Macfarlane Burnet, the 73-year-old Nobelist, carries a card in his wallet that says:

"I request that, in view of my age, any prolonged unconsciouness, whether due to accident, heart attack, or stroke, should be allowed to take its course without benefit of an intensive care or resuscitation ward."

Sir Macfarlane has explained his feelings as follows: "Once I reach the stage of pre-death, all I ask is that I go on to the end with as much dignity and as little pain as possible. Death in the old should be accepted as something always inevitable and sometimes positively desirable. Physicians should not compel old people to die more than once.

"Since 1955 most of the advances in biomedical science have been to provide longer life to persons who neither appreciate the gift nor are capable of usefulness with it. When the old reach a stage when they cannot cope for themselves, it is true compassion to bring that intolerable stage of pre-death to an end as soon as possible."

Medical Tribune World Service

DISABILITY INSURANCE UNDER SOCIAL SECURITY

CHARLES S. RIEGEL, M.D.

Whenever a physician is asked to furnish a medical report in connection with a patient's claim for Social Security disability benefits, it's a reminder that Social Security is not just for the retired — it also provides important financial help for people who cannot work because of a serious illness or injury. Currently, over three million men, women, and children receive Social Security disability checks every month because someone in the family—usually the breadwinner—is disabled. Their payments total almost $5 billion a year. In addition, more than 76 million working men and women are insured for disability benefits as a result of their earnings—wages or self-employment—under Social Security. Beginning July 1, 1973, full Medicare protection was extended to persons under age 65 who for at least 24 consecutive months have been receiving monthly Social Security benefits because they are disabled.

A person under 65 can receive monthly disability benefits if he has a physical or mental impairment severe enough to prevent him from doing any substantial gainful work for a year or longer. Benefit amounts based upon a person's earnings under Social Security range from $84.50 to $345.50 a month for the disabled worker alone, and the maximum monthly benefit for a disabled worker with a family is $620.40. Everyone who applies for disability benefits — whether he subsequently receives monthly benefits or not—is considered for referral to his state vocational rehabilitation agency for service. Such services include counseling, teaching new employment skills, training in the use of prostheses, and job placement. These services are generally provided from State-Federal appropriations. In some cases, however, Social Security pays the cost of rehabilitating disabled beneficiaries.

From a Small Beginning

The original Social Security Act of 1935 provided benefits only for the retired worker. It was not until 1954 when the disability "freeze" provision was added that the law gave some protection to the disabled worker. Under the freeze, years when a worker earned little or nothing because of disability were not counted against him later in deciding if he was eligible for retirement benefits, or in figuring his retirement benefit amount. To be eligible for the freeze, the worker had to have a disability that was expected to be of "long-continued and indefinite" duration.

Two years later, monthly cash benefits were provided for disabled workers aged 50 to 64, and also for the disabled adult sons and daughters of retired or deceased workers if the son or daughter had been continually disabled since childhood.

Over the years, the program has been further improved. The minimum age limit of 50 for payment of benefits to disabled workers was eliminated; "long-continued and indefinite" duration was changed so that an insured worker could be eligible if his disability had lasted or could be expected to last for at least 12 months; fewer years of covered employment were required for a young worker to be insured for disability; and benefits were provided for disabled widows (between ages 50 and 60) of covered wage earners. The latest change is, of course, Medicare protection for disabled persons under 65.

Dr. Riegel is Chief Medical Consultant, State of Delaware Disability Determinations Service.

Who Can Get Benefits

Social Security disability benefits can now be paid to:

- *A disabled worker* under 65 and his family, if he has worked under Social Security for a certain length of time, ordinarily five to ten years preceding the onset of disability. (Special provisions apply to workers disabled by blindness allowing them to qualify with even less work under the program.) For the worker who becomes disabled before he reaches 31, the work requirement ranges down with age to as little as one and a half years.
- *A person continuously disabled since childhood* (before age 22), if one of his parents (in some cases a grandparent) who is covered under Social Security, becomes disabled, or dies. The mother of the disabled son or daughter may also receive monthly benefits as long as she has the child in her care.
- *A disabled widotw 50 or over,* if her late husband was covered under Social Security, and if she meets the specified level of medical severity. This also applies to disabled dependent widowers and certain disabled surviving divorced wives.

Reporting Medical Evidence

When a patient applies for benefits, he is asked to submit medical evidence to support his claim. This evidence usually consists of data from the records of his treating physician, clinic, or other medical source. Our experience with the disability program in Delaware indicates that in about three out of five cases no further medical development is needed because the treating source already has enough information on record to provide a good picture of the applicant's condition and how it limits his ability to work.

This information may be requested on the patient's behalf by a Social Security office — or, more often, by Disability Determinations Service. This is the full name of the agency in Delaware that evaluates Social Security disability claims for Delaware residents. Like other state agencies throughout the country that work with Social Security in the disability insurance program, Disability Determinations Service in Delaware includes both physicians and trained disability examiners on its professional staff. They form a balanced team of medical and non-medical people who can handle anything from a strictly medical issue to a complete assessment of the vocational factors which bear on the disability decision.

With the assistance of our staff of reviewing physicians, we endeavor to make these requests for medical information relate as directly as possible to the condition which the claimant states is the cause of his disability. The goal of the individually tailored request is to ease the medical reporting burden of the busy physician or clinic, without jeopardizing the claimant's right to have his case decided on the basis of all relevant information available.

The evaluating physician here in Disability Determinations Service never sees the patient. He depends heavily on information supplid by the physician or clinic to assess the severity of the applicant's impairment, its expected duration, and the extent of his residual functional capacity. The disability decision, therefore, rests largely on the quality of the medical evidence obtained. A detailed report from the treating source, including objective findings and laboratory procedures, will usually be sufficient for us to evaluate the claim and make a decision.

For example, if the patient experienced a myocardial infarction, we would look to the report submitted by the treating source for such information as date of occurrence, place and duration of the hospitalization, as well as results of x-rays, electrocardiograms, and other laboratory studies. Serial ECG tracings should, whenever possible, accompany the report so that our staff of physicians may also have the benefit of reviewing this essential documentation. Equally important is the medical history, including onset of chest discomfort, relationship to effort, intensity, location, radiation, regularity, and to what extent relief is obtained by rest or medication.

If a report does not contain all the findings necessary to make a proper decision, one of our reviewing physicians may recontact the medical source. However, the additional time required may delay the patient's claim and can add up to a significant additional program expense.

You can help speed the decision on your patient's claim by reporting all relevant data about his medical condition as promptly as possible. Establishing the onset date of disability — often a key factor in determining the beginning date and amount of the claimant's benefits — is frequently difficult. Therefore, it is extremely helpful if the reporting physician includes the date of each important fact or finding. To save time, he may enclose photocopies of pertinent sections of the patient's chart or of hospital or consultant's reports.

Criteria for Evaluating Disability

In making disability determinations, our agency uses medical criteria developed by the Social Security Administration to insure uniform evaluation of all applicants no matter where they live, and to help simplify and speed the decision process. These criteria were worked out with the aid of practicing physicians, major medical organizations, and SSA's Medical Advisory Committee.

Generally, a claimant who is not working can meet the Social Security definition of disability if he has an impairment or combination of impairments that are the same as, or medically equivalent to, any set of findings in the criteria. (This is the only way the widow 50 or over can qualify for disability benefits.) However, for all other claimants whose impairments fall short of this test, such factors as age, education, and work experience added to the functional limitations imposed by the medical condition are taken into consideration in making the disability decision.

The complete criteria, including the medical findings listed by body system, are contained in a handbook designed especially for professionals who come in contact with the disabled population. The handbook describes impairments in terms of specific symptoms, signs, and laboratory findings that are presumed to be severe enough to prevent a person from working for a year or longer.

The handbook may be obtained from Disability Determinations Service, 2008½ Pennsylvania Avenue, Wilmington, Delaware, 19806, telephone number 656-2561. We also welcome any inquiries from physicians who wish to know more about the Social Security disability program and its policies and procedures and/or may be interested in performing consultative examinations for our agency.

Because our entire medical staff consists of practicing clinicians, we realize the amount of paperwork that is constantly piling up on the physician's desk. However, there is no other fair way to adjudicate a claim than to have the applicant's physician submit needed data since Social Security disability regulations require that the substantiating medical evidence be in the file. The disabled worker applicant is also made aware that he or she is responsible for any charges submitted by the treating physician.

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HEROIN: A BIG BUSINESS

The present production and sale of heroin is an enterprise with gross profits that rivals many industries. Ten kilograms of opium grown in Asia and sold at $25 per kilogram will produce 1 kg of uncut heroin worth $20,000 in the United States. The ultimate aggregate worth of the same kilogram of heroin may be as much as $400,000. The amount of money that must be spent by a heroin-dependent person to support an average habit can vary from $15 to $100 per day.

Barry Stimmel, M.D.
The Socioeconomics of Heroin Dependency
New England Journal of Medicine
December 21, 1972

Letters to the Editor

To the Editor:

In the treatment of cancer of the skin, only two modalities offer the patient approximately 90 percent probability of permanent cure: surgery and radiation therapy. Both modalities have made great advances in the last decade. Such commonplace statements still made or written by surgeons* as Radiation produces severe changes of the tissue resulting in poor cosmetic results, Radiation is dangerous as it is cancerogenic, etc. are anachronistic and not in the best interest of good medicine.

Modern radiation therapy utilizing proper x-ray equipment, radium, gamma- or beta-producing isotopes, and adequate fractionation of external irradiation obtains excellent cosmetic results with minimal sequelae.

Neither surgery nor radiation can be defined as the treatment of choice, but the careful evaluation of each individual case will invariably indicate which of the two procedures is the best for that particular patient.

Several factors are to be considered in choosing surgery or radiation:

1. *Age.* By and large, younger patients with cancer of the skin affecting exposed areas of the body and who, for reason of their work (farmer, sailor, etc.), are exposed to the sun's rays for many years, should be treated by surgery if none of the other factors is a contraindication.
2. *Previous exposure to radiation.* This is not necessarily a contraindication to radiation. If we are dealing with a radiation-induced-cancer (such as in patients previously treated with radiation for acne), this factor is to be disregarded in choosing the proper modality. If, on the other hand, we are dealing with a recurrence of a lesion previously treated with radiation, then the treatment of choice is surgery, regardless of other intervening factors.
3. *Presence of local complicating factors.* Such things as presence of scars, lupus, syphilis, infection, or other factors which reduce the blood supply to the lesions, are contraindications of radiation therapy.
4. *Medical status.* Several surgical procedures, mostly excision of large lesions followed by plastic reconstruction, require a general anesthetic, which may be too risky in elderly patients. In such cases, radiation therapy is to be preferred.
5. *Location.* This is perhaps the most important criterion. Lesions which would require extensive grafting or reconstructive procedures, or in which their removal would cause serious functional impairment, are better treated with radiation. Such include mostly lesions of the nose (ala nasi, columella), lesions of the eyelids, and of the ears. The use of radiation with appropriate filtration in such cases considerably reduces the chances of chondritis and produces excellent cosmetic and functional results.

   In addition, lesions which by their natural history have the tendency to extend beyond areas of successful surgical excision are best treated with radiation. A classical example of this type is a lesion originating from the inner canthus, where early fixation to the underlying bone and invasion of the ethmoid is a common occurrence. Radiation therapy of higher energy applied to such areas is usually more successful than surgery.

   Lesions originating from the skin of the extremities are better treated by surgery.
6. *Extension.* Lesions which, because of their extension and infiltration of deep structures, are technically not resectable

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*See "Diagnosis and Treatment of Skin Cancer," Neil A. de Leeuw, M.D., *Delaware Medical Journal,* October 1973.

should be treated with radiation rather than performing an inadequate surgical excision, even if it is followed by postoperative radiation therapy.

7. *Esthetic factor.* This is also an extremely important factor. In general, better cosmetic results are obtained with properly and adequately fractionated radiotherapy in the hand of a skilled radiotherapist. Even large lesions can be permanently cured without mutilation or dysfunction and with practically no visible sequelae. In such cases, it seems more desirable to have a large area of atrophic, slightly discolored skin following radiation therapy than to have the grotesque appearance resulting from surgical removal of anatomical structures and their reconstruction.
8. *Previous treatment.* As a general rule, recurrences after surgery are to be treated with radiation, and postradiation recurrences are to be treated with surgery.

To summarize, in cancer therapy the treatment modality to be chosen is the one that yields the best curative results.

In cancer of the skin, as the results of surgery and radiation therapy are practically the same, indiscriminately choosing one modality to the exclusion of the other is denying the patient the best possible cosmetic or functional result.

If the rate of control is the same, the modality which yields the best cosmetic and functional result should be chosen, in most instances this is radiation therapy.

If the rate of control and the cosmetic results are the same, then the most rapid modality of treatment should be chosen.

Only by weighing all the aforementioned factors can the surgeon or the radiotherapist offer his patient with cancer of the skin the best treatment to obtain, not only a permanent cure, but also a satisfactory functional and cosmetic result without undue morbidity or mortality.

Carlo A. Cuccia, M.D., F.A.C.R.

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BLINDNESS IN THE UNITED STATES

There were about 468,000 blind people in the United States in 1972, according to an estimate by the National Society for the Prevention of Blindness. This number corresponds to a rate of 225 per 100,000 population and includes all who were totally blind or whose vision was sufficiently impaired to prevent them from performing their normal activities. Blindness is defined as visual acuity for distant vision of 20/200 or less in the better eye, with best correction. Approximately half of all the blind are 65 years of age or older.

Profile of Blind Persons
Statistical Bulletin, July 1973

President's Page

RESTRUCTURE ORGANIZED MEDICINE IN DELAWARE?

Physicians in Delaware are organized into the Medical Society of Delaware, the three county medical societies, and the Academy of Medicine. Each hospital has a staff organization with quarterly meetings, each major specialty has an organization with periodic meetings, there is a Society of Newark physicians, and there are other smaller organizations. These various organizations require much time from physicians for general meetings, committee meetings, reports, etc. In Wilmington the merger of three hospitals into the Wilmington Medical Center made a major improvement in utilization of physicians' time by omitting duplication of individual hospital staff meeting and individual hospital committee meetings. Is it now time to further consolidate and coordinate the above-mentioned physician organizations?

Over the last two years committees at the State level have considered this subject. To date these have been study committees and not implementation committees. One recommendation was that the County Medical Societies be abolished and all their functions taken over by the State Society. I am very much against this recommendation and feel that it does not represent the wishes of the majority.

I do feel that the State Society should specialize in carrying out the business of the physicians in our State. It is the logical organization to deal with PSRO, HMO, and other Federal programs. It also is the agent to deal with third party insurance carriers.

I feel the County Medical Society should be maintained in its traditional role by (a) representing physicians at the local level, (b) continuing their social and program functions that they have performed so well in the past, and (c) really providing the glue that holds the physicians together as an effective force.

It is time, however, that the following changes may be made: (a) have the administrative duties of all three County Medical Societies come through a common office and be coordinated with the state society; (b) coordinate hospital staff meetings with county medical society meetings (eg, could the quarterly staff meeting be combined with the monthly County Medical Society meeting?); (c) coordinate the specialty societies' (Delaware Society of Internal Medicine, etc.), activities with the State Society to avoid duplication of committees and to assist the specialty societies in their various economic, legal, etc. problems; (d) have the Academy of Medicine and its programs coordinated with the State Society and the Wilmington Medical Center; and (e) consider enlarging the full time staff of the State Society because of increasing demand. As the federal programs and federal laws in the health area mushroom, we must be ready to respond.

In summary, we are all Delaware physicians. Let us try to develop the best organization that we can that requires a minimum of physician time and yet is organized well enough so that the complex health issues on the horizon do not overwhelm us.

William J Vandervort MD

Editorials

COMFORTABLE RETIREMENT

Several physicians have asked me how much it costs to live comfortably at retirement. It is my opinion that $100,000 or $150,000 may be adequate. Two hundred thousand dollars well invested would be ideal. It is assumed there are no children to support or outstanding debts.

It seems feasible that some growth stocks should be liquidated with two exceptions: good growth stocks paying 10% annually, enabling you to sell off 10% yearly and still have your original investment and a good bargain. To quote Alexander Hamilton, "Bargains are always there and when nobody wants them is usually the time to buy them."

Most physicians would be surprised to know their present net worth, arrived at by subtracting their liabilities from their assets. These sources of income include the following:

1. Social Security
2. Pension
3. Keogh Plan
4. Insurances
5. Stocks and Bonds
6. Government Notes and Bonds
7. Sales of properties (including home)
8. Cash, Savings Certificates, and Funds

Investments may include, according to the climate, Treasury Notes, Savings Certificates, Utilities, and high grade, Triple A Bonds. These suggestions if followed should average 7% yield. In phasing out all investments or making new ones your investment broker should be consulted.

Here are some tips for the budget minded. Travel off-season and during the middle of the week at savings from 30 to 50%. At the theatre attend matinee shows when possible. Clothes can be bought on sale. A compact car is a gas saver especially recommended in these days of high prices and ecology.

I must emphasize the importance of consulting your banker and attorney in reference to setting up a trust fund for your heirs and drawing up a will for both yourself and your spouse.

LEON V. ANDERSON, M.D.

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LEST WE FORGET: AN ADDENDUM IS NEEDED

In our October issue we published a list of Delaware physicians decorated in World War II, which was obtained from the *Delaware Medical Journal*, 22:35-37, 1950. It has been called, gently but forcibly, to our attention that the list is very incomplete. We would like to compile an accurate list of Delaware physicians decorated in World War II and also in subsequent conflicts, whether or not they were Delaware physicians during their service. Will you help?

B.Z.P.

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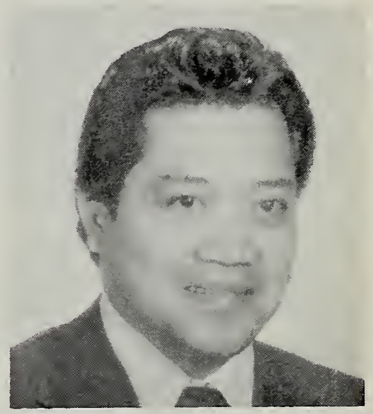
HIPPOCRATES ON THE PHYSICIAN'S JOB

It is necessary, said he, for the physician to provide not only the needed treatment, but to provide for the sick man himself, and for those beside him, and to provide for his outside affairs.

New Members

Elizabeth Craven, M.D., a graduate of New York Medical College, '61, served her internship at Bryn Mawr Hospital, Bryn Mawr, Pa., and her residency and additional one-year fellowship at St. Christopher's Hospital for Children, Philadelphia. A Board-Certified Pediatrician, she is on the staff of the Wilmington Medical Center's Delaware Division. Dr. Craven, her husband, (also a physician), and son live in Media, Pa. Her interests include church choir singing, chess, and ice skating.

Alexander D. Balan, M.D., a graduate of the Institute of Medicine, Far Eastern University, Manila, Philippines, '62, served his internship at Pittsburgh Hospital, Pittsburgh, Pa., and his residencies at St. Francis Hospital, the Wilmington Medical Center, and Harlan Appalachian Regional Hospital. A surgeon, Doctor Balan's office is in the Professional Building, Wilmington. He, his wife, and three children live in Wilmington.



Stephan Cooper, M.D., a graduate of the University of Vermont and the State University of New York Downstate Medical Center, '64, served his internship and residency at the Medical College of Virginia Hospital. A Board-Certified Radiologist, his office is in Dover, Delaware. Doctor Cooper, his wife, and two children live in Dover.

William Slate, M.B., Ch. B., M.S., a native of Cape Town, South Africa, is a graduate of the Faculty of Medicine, University of Cape Town. After receiving degrees in medicine and surgery there, he earned an M.S. in Obstetrics and Gynecology at the State University of Iowa. An Obstetrician and Gynecologist, he served two years in the U.S. Army Medical Corps and has taught obstetrics and gynecology at the University of Illinois, Linda Loma University, Temple University, and Thomas Jefferson University. He belongs to many medical organizations and has had numerous medical papers published. Doctor Slate is Director of the Department of Obstetrics and Gynecology at the Wilmington Medical Center. He, his wife, and their two children live in Newark.

Deaths

ALLAN J. FLEMING, M.D.

With the death of Dr. Allan Fleming August 26, occupational medicine sustained the loss of a well-known and highly respected leader. Dr. Fleming was the former Medical Director of the E. I. du Pont de Nemours Company, having retired in 1966.

He was born in Winnipeg, Canada, in 1901 and received his bachelor and master degrees from the University of Manitoba. He earned his medical degree at McGill University. Before joining du Pont he was an industrial physician at the Belocil Plant of Canadian Industries Ltd., Quebec.

He came to the du Pont Company in 1937 as a toxicologist at the Haskell Laboratory of Toxicology and Industrial Medicine, and in 1941 became Assistant Director of the laboratory. In 1948 he was appointed Assistant Director of the du Pont Company's Medical Division and was promoted to Director in 1954.

Dr. Fleming wrote many papers on various aspects of toxicology and industrial medicine and was co-author of *Modern Occupational Medicine*, a guidebook to the planning and functioning of industrial medical programs.

Dr. Fleming was certified by the American Board of Preventive Medicine in Occupational Medicine and was a Fellow of the Academy of Occupational Medicine, the Industrial Medical Association, the American College of Preventive Medicine, and the American College of Physicians. In 1954 he was elected to the Romazzini Society, an honorary organization whose members have made outstanding contributions to the field of Occupational Medicine.

He was also a member of the Canadian Medical Association, the American Medical Association, the Medical Society of Delaware, and the New Castle County Medical Society. He was a charter member of the Delaware Industrial Medical Association and served on its Board of Directors.

Dr. Fleming enjoyed music and played the violin in the Wilmington Symphony Orchestra and the du Pont Chamber Orchestra. He was an elder and trustee of Hanover Presbyterian Church.

He is survived by his wife, Mrs. Betty Mingle Fleming; three daughters, Mrs. Ailsa Pennington and Miss Heather Fleming, both of Wilmington, and Mrs. Holly Wilson of Indianapolis; a son, the Rev. James M. Fleming, of Chicago; a brother, Mr. Murray Fleming, of Thunder Bay, Canada; two sisters, Mrs. Marian Carter, of Winnipeg, and Mrs. Jessie Ryan, of Toronto; and four grandchildren.

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PAUL F. DUNN, M.D.

Dr. Paul F. Dunn, 58, Director of the Delaware Guidance Services for Children and Youth, died August 7, 1973 of an apparent heart attack.

Dr. Dunn was a native of Bristol, N.Y. He came to Wilmington in 1963 as a staff psychiatrist for the former Wilmington Child Guidance Center and was appointed director of the DGSCY two years ago.

He was a graduate of Providence College in Rhode Island and received his M.D. degree from Jefferson Medical College in 1941.

He served his residency at the Veterans Administration Hospital in Philadelphia and a fellowship in child psychiatry at the Philadelphia Child Guidance Center.

Dr. Dunn was a member of the Delaware Psychiatric Society, the American Academy of Child Psychology, and the American Association of Psychiatric Services for Children.

He is survived by his wife, Mrs. Lorraine Dunn, three daughters, and two sons.

Book Reviews

A MINNESOTA DOCTOR'S HOME REMEDIES FOR COMMON AND UNCOMMON AILMENTS by **John E. Eichenlaub, M.D.**, 2nd edition, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1972. 264 pp. Price $6.95.

The author is a graduate of Johns Hopkins University and has been on the faculties of two universities as well as being active in family medicine for many years. His background and training make him eminently qualified to present this book of home remedies. This second edition is completely rewritten and up-to-date with the inclusion of much new material.

Historically the presentation of his book is in the grand tradition of Dr. Tissot and Dr. Buchon, both of whom wrote similar books in the Eighteenth Century. The material is presented in an informal, friendly style, with just enough technical medical details to provide a working diagnosis of the average injury or illness for the intelligent layman. In short chapters Dr. Eichenlaub covers the most commonly encountered home health problems. He gives a short description, discusses method of treatment and danger signs to look for, as a guide to when to seek professional help. There are chapters dealing with the musculoskeletal system, which give excellent advice regarding the treatment of arthritis and rheumatism. There is also a well-written section on gastrointestinal disorders, which contains a wealth of sound medical knowledge. There are seventeen chapters in all, the last of which deals with home remedies during pregnancy.

In all, the book gives good general advice that any knowledgeable person can follow. The author is honest in advising going to visit the doctor for any unexplained complaints, and how to prepare oneself to answer the doctor's questions most honestly.

After an enjoyable reading of this compact book I highly recommend it to all physicians who practice family medicine and also to the general public for its treasure house of home medical knowledge.

Allen C. Wooden, M.D.

PRINCIPLES AND PRACTICE OF MEDICINE, 18th edition, edited by **A. M. Harvey**, Appleton-Century-Crofts, New York, 1972. 1055 pp. Price $24.50.

The 18th edition of the Osler Textbook currently edited by Harvey et al is a product primarily of the staff at Johns Hopkins University Medical School.

Their purpose in producing the text is to focus upon the patient as he presents with a disease rather than on the disease itself. They consider methods employed in acquiring factual data and demonstrate the discriminating use of diagnostic techniques and the systemic analysis of the accumulated information.

The method of presentation is different from the usual textbook of medicine in that great emphasis is placed on tables and charts and less on rhetoric. A lot of information is contained in these tables so that an understanding of them makes the understanding of the disease process much simpler. The information is concise and amply annotated for further reference.

The approach the authors use makes the analysis of a disease process seem simple and yet shows the value of precision and discrimination. The disease-oriented presentation makes the study of the text more meaningful, practical, and relative to problems presented by patients themselves.

The weakness of the book is that it is not an encyclopedic text with detailed biochemical and physiological backgrounds presented for every condition. Indeed, some of the rarest of conditions, eg, epidemic neuromyosthemia, are not mentioned, but such data are present in more specialized texts. References are appropriately made, and the bibliographies are superb.

This then is a welcome book in the field of general internal medicine and is recommended to all who are interested in the practice of clinical medicine.

R. Walter Powell, M.D.

THE BUTTERFLY CASTE by **Elizabeth W. Etheridge**, Greenwood Publishing Company, Westport, Conn., 1972. 278 pp, illustrated. Price $11.00.

Pellagra is a dramatic example of a primary nutritional deficiency disease. This book provides a coherent summary of the intriguing maze of false leads and interpretations confronting Joseph Goldberger in his search for the cause of pellagra and its symptoms of dementia, diarrhea, and the characteristic bilateral dermatitis which provides the basis for the book's title. This search is aptly described on the book jacket as a medical detective story. The account presented in this book is complete, comprehensive, and well-documented, portraying vividly the fascination and frustration inherent in a sustained and systematic research effort.

The added dimension of this particular account is provided by the social, economic, and political perspective in which it is placed. It is within this context that the author focuses on the variety of factors which contributed to the difficulties encountered in transforming the scientific knowledge of the cause and cure of pellagra into general acceptance, and then application of that knowledge to implement effective programs of prevention and control. The author provides a balanced picture of both positive and negative illustrations of such efforts.

The parallel between the pellagra story and the events which culminated in the 1969 White House Conference on Food, Nutrition and Health emerge clearly even without the brief epilogue to emphasize it.

The Butterfly Caste can be read with as much interest and profit by the layman as the physician, nutritionist, dietitian, public health officer, social worker, or student.

Arlette I. Rasmussen, Ph.D.

Dr. Rasmussen is Associate Professor of Nutrition, College of Home Economics, University of Delaware.

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CHAUCER'S PHYSICIAN by **H. E. Ussery**, Tulane University Press, New Orleans, La., 1971. 158 pp. Price $4.50.

This is an ATSE Monograph in the Tulane Studies in English. It is a very scholarly presentation of a most difficult subject. The author has consulted the original documents wherever possible and has critically evaluated them in a modern approach to the social and economic history of the Fourteenth Century.

The text is organized into five chapters: 1) a close look at the practice of medicine in the Fourteenth Century in England; 2) the eighty physicians or surgeons possibly known to Chaucer; 3) a closer look at the four physicians he knew best; 4) a composite picture of a physician of this period; and 5) a critical presentation of the contents of the "Physician's Tale."

This study is of great value because it adds much-needed critical information to a period of scientific and medical history of England which up to now has been, to say the least, poorly understood.

This is a most interesting book, but limited to those scholars or historians interested in this period of development of English science and culture. Many of the quotations are in Old English and are difficult to understand without the use of a dictionary dealing with obsolete English words. The book also contains a storehouse of hard-to-find historical material in its extensive footnotes.

Allen C. Wooden, M.D.

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THE GIRLS OF HUNTINGTON HOUSE by **Blossom Elfman**, Houghton Mifflin Co., New York. 212 pp. Price $5.95.

The Girls of Huntington House is a lively report of the activities of a group of unwed girls in a maternity home. The author is a young English teacher, who finds the students uninspired by her efforts to teach them to write essays, book reports, and the traditional "units" taught to high school seniors. The girls are more concerned with their own problems, and usually turn her classroom into a bull-session which is delightful for the reader, but frustrating to the teacher. At times, she is able to overcome their idolence by having them produce a play, by bringing in a charming librarian, and finally by having them read "The Scarlet Letter," to the horror of the director of the home.

Unfortunately, the author attempts to analyze the thoughts and feelings of the girls and gets mired down with her own hang-ups. Too bad she didn't stick to telling her story, which she does with style and verve! When she advises her favorite student, Sara, to run off with her penniless lover to live in the woods and suckle her baby by a stream ("Who needs a pediatrician?"), it is too much!

Although the book is lively and full of humor, there is throughout a feeling of sadness and ennui. The girls are cloistered in this loveless home, away from their families, out of contact with the outside world, and are almost invariably destined to give up their infants for adoption. (What a different atmosphere pervades a day school for pregnant girls, such as the Delaware Adolescent Program, Inc. At DAPI the girls live at home, have daily contact with the community, and usually keep their babies. A visit to a school like this is not much different from visiting a regular high school, except for the prevalence of large bellies.)

Reading this book makes one feel grateful that the mores of our society have changed sufficiently to make most of these houses for pregnant girls a relic of the past.

Marjorie J. McKusick, M.D.

* * *

PHYSIOLOGY OF MEDICAL PRACTICE. A Guide for Nurses, Allied Health Professionals, Physician Assistants and Office Personnel by Warren R Guild, M.D., Robert E. Fuisz, M.D. and Samuel Bojar, M.D., Medcom Press, New York. 289 pp. Price $7.95.

This is a book which was crying to be written, or perhaps one should say produced, since it is a publication of MEDCOM, the very with-it "world leader in multimedia health education programs," their own description of themselves. Its authors are, respectively, publisher of MEDCOM, Associate in Medicine at Harvard Medical School, and Assistant Professor of Psychiatry, same reputable establishment. These three deserve great credit for attempting to synthesize the essence of the five-foot shelf which is the medical student's destiny into one paperback of 289 pages. Their book should find a large readership (one could also say customers, for I am sure it will be, as medical texts go, a best seller) among the numerous health personnel of one kind and another now in training whose proliferation is rampant and to be encouraged, and whose education should be everyone's concern.

The format is readable, even entertaining. It is copiously illustrated, with line drawings, x-rays, schematic models, and; yes, cartoons. Some of the latter are worth studying. They are a bit cutesy, but to one who has attempted to gain a concept of, for example, the metabolism of glucose, it is interesting to see it cartooned as a shop with 11 capped workers (the 11 cytoplasmic enzymes) who are processing glucose into ATP, which is boxed and stored, and puyruvic acid nuggets, which are fed into an old-fashioned furnace labeled "mitochondria."

I found few inaccuracies, and, given the delay between medical authorship and publication even in the most efficient of outfits, these are bound to occur: to wit, the subdivision of viral hepatitis into infectious and serum, the latter transmitted only by parenteral route—a traditional concept but one now recently disproven.

Many chapters include succinct case histories of one or two paragraphs which, considering the aim of this volume to "put it all together," seems to be a very good idea. Each chapter is followed by a brief bibliography, which includes a gamut of publications, from medical texts to *Today's Health* and *Scientific American.*

This little book should have many uses, including quickie review for the physician who wishes to read, in the simplest terms, an overview of a particular body system, particularly if charged with discussing it before non-physicians or non-expert audiences.

Bernadine Z. Paulshock, M.D.

STEDMAN'S MEDICAL DICTIONARY, 22nd Edition, Williams and Wilkins Company, Baltimore, 1972, 1533 pp. Price $18.50.

Twenty-two editions is an impressive number. The managing editor of this one claims revision of more than 30% of the previous edition with 7,199 new entries and 24,877 revised definitions. This seemed like a huge number of words redefined, but it is indeed so. On three pages chosen at random the entries were compared for content.

Same	Revised	New Entries	Total
38	18	6	62
51	7	4	62
47	12	13	72
—	—	—	—
136	37	23	196

Therefore there were a total of 60 new or revised entries out of a total of 196, or approximately 30%. On five pages chosen at random there was an average of 59 words per page. Multiplied by 1422 pages, this totals about 85,000 entries, and accords with the estimate of about 25,000 revisions, which is indeed approximately 40% of 85,000.

Examples of revised definitions from Stedman's Medical Dictionary:

21st Edition:

1. Gnathostoma. [G. *nathos,* jaw + *stoma,* mouth]. A genus of nematoid worms, formerly called *Chirancanthus;* several species are parasitic in the cat tribe, cattle, and swine.
2. G. spinigerum. A fatal parasite of cats, has occasionally been found in man in the Far East; G. *siamense.*
3. goiter. Bronchocele; struma; a chronic enlargement of the thyroid gland, not due to a neoplasm, occurring endemically in certain localities, especially mountainous regions, and sporadically elsewhere.

22nd Edition:

1. Gnathostoma. [gnatho- + G. *stoma,* mouth]. A genus of nematode worms, formerly called Chiranthus, characterized by a series of rows of cuticular spines about the head; several species are pathogenic parasites of cats, cattle and swine.
2. G. spinigerum. A frequently fatal parasite of cats, has occasionally been found in man in the Far East; transmitted via coppods and fish to cat or man; several cases have been reported of infection of the human eye or brain with wandering larvae of this species.
3. goiter. Struma; a chronic enlargement of the thyroid gland, not due to a neoplasm, occurring endemically in certain localities, especially mountainous regions, and sporadically elsewhere.

The editors now include such persons as an Air Force colonel who is an editor for *Aerospace Medicine.* Interestingly, Environmental Medicine and Otolaryngology are combined under one editorship (smog from that plastic plant gets in your eyes?).

The print is easy, the cross-references numerous. Unaccountably to my way of thinking, but apparently traditional with medical dictionaries, syllabification is not indicated: editor's choice whether to write app-end-ix or ap-pend-ix.

There is a long section, How to Get the Most out of Your Dictionary, and a section on Medical Etymology. Plus 1422 pages of vocabulary, beginning with the letter alpha and ending with zymurgy, ("the chemistry of the fermentation of alcoholic beverages. See zymology.").

How old is your present medical dictionary? Does it predate gnotobiotics ("the study of animals in a 'germ-free' environment")?

Bernadine Z. Paulshock, M.D.

* * *

IN LIGHT OF HISTORY by **J. H. Plumb,** Litt. D., Houghton Mifflin, Boston, Mass., 1973. 263 pp. Price $6.95.

This book is a rather unusual compilation of essays on 18th and 19th century subjects and subjects of modern concern. The author has been Professor of Modern English at Cambridge, England, since 1966. In 1960 he was a Visiting Professor at Columbia University, and in 1971-72 a Distinguished Professor at the City College of New York. Born in England in 1911 and educated at college in Leicester and Cambridge, England, he has established himself as a definitive commentator on both contemporary and historical subjects and has written many books. He is now writing "The Life of Sir Robert Walpole."

In Part One, "The 18th Century," there are 10 essays (122 pages) on subjects which should be of great interest to one concerned with this historical period.

Part Two, "In Light of History," from which title the book takes its name, consists of 15 essays (96 pages) on many different subjects. The first is "Secular Heritage" in which the Hippie Culture is described. In one essay entitled "The Women's Burden" much attention is given to the wretched fate of prostitutes. There is an essay on "The Dying Family," in which emphasis is placed on the changing picture of family relationships. There are essays on children being the victims of time; on rioting, in which he states that this is a part of the life of the times; on diplomacy, in which he speaks of this as being an almost dead art; on clothes, which he states used to mark the standing of persons of the day; on anxiety, particularly in marriages; on the part played by astrology and genealogy; and on the terrible conditions he found in Detroit.

The reviewer prefers Part III (37 pages) with three essays on "The World of Samuel Pepys," "The Victorians," and "The Edwardians." There are many apt sayings, such as "It does not matter what you do so long as you do not frighten the horses." There is a particularly good section on suffragettes in England in which he states that it was these dedicated, single-minded Edwardian women, led by Sylvia Pankhurst, who heralded the long heritage of women which is now begining to snowball. There is a great deal about sex and morality in most of the essays, and it is stated, "The Bishops thundered in the House of Lords on the decay of the nation's morals."

The book is very interesting reading, but has very little directly to do with medicine. The author's use of the English language is superb, as would be expected from an eminent historian of Doctor Plumb's caliber.

A. R. Shands, Jr., M.D.

* * *

WOMEN IN WHITE by **Geoffrey Marks** and **William K. Beatty**, Charles Scribner's Sons, New York, 1972, 239 pp. Price $6.95.

Women in White, a book about woman healers since Hygeia, Aesculapius' daughter, is dedicated to a male nurse. The history of the earliest "woman healers" I found fascinating; I never before heard it suggested that Helen of Troy used potions to poison her enemies and perhaps also to attract her lovers. But the history of woman in this century, the modern era, really appalled me. As late as 1868, the Philadelphia Medical Society decreed that its members could not consult with female physicians and that if any member accepted a chair on the faculty of the Woman's Medical College he would forfeit his membership.

Women were not admitted to AMA membership until 1915; the first woman delegate became one by subterfuge—she wrote S instead of Sarah. This resulted in a motion to refer the names of any female delegates to the Judicial Council, which was tabled for *forty* years! The College of Physicians did not have any women members until Catherine McFarlane, Dean of Woman's Medical College, was admitted in 1932.

I had no idea what male chauvinists the medical hierarchy really were, nor what debt I personally owe to the very brave ladies of the last century who pushed and beat on the doors of medicine in America until they grudgingly opened to women.

Bernadine Z. Paulshock, M.D.

* * *

LABORATORY TESTS IN THE DIAGNOSIS AND INVESTIGATION OF ENDOCRINE FUNCTION, edited by **Roberto F. Escamilla, M.D.,** 2nd edition, F. A. Davis Company, Philadelphia, 1971, 456 pp, illustrated. Price $23.50.

Some of the chapters of this book are better than others; this is bound to happen when a book represents the printed version of material originally presented as lectures or seminars. The rapid advances in endocrine tests with respect to both clinical and laboratory procedures make it unwise to use as one's only reference a hardback. Nevertheless, a book like this one does lead one to the original papers although they would probably be referenced in more current journals. Good for an overview, but not as gospel.

Bernadine Z. Paulshock, M.D.

Highlights

OCCULT BRONCHOGENIC CARCINOMA

Bernard R. Marsh, M.D., *Assistant Professor of Laryngology and Otology, The Johns Hopkins University School of Medicine. Presented to the Tuesday Morning Medical Conference, Wilmington Medical Center.*

Definitive treatment of early bronchogenic carcinoma has seldom been achieved in spite of early detection by sputum cytology. Conventional bronchoscopes do not allow detailed exploration of the bronchial segments where tumors originate, and differential cytologic techniques have been imprecise and unreliable. Thus early therapy has awaited more effective methods for identifying the specific bronchus involved when radiologic studies fail to demonstrate the lesion.

A three-phase study is now carried out in the Broyles Bronchoscopic Clinic including: (1) cytologic localization, (2) fiberoptic survey, and (3) histologic mapping of bronchial margins. Findings are recorded by means of a color television documentation system. A review of the surgical pathology in four cases has revealed a relatively large area of in-situ carcinoma in the region of very small invasive tumors. One patient refused surgery and one was referred for radiotherapy.

This newer technique is therefore of value in locating early bronchogenic carcinomas which cannot be localized by conventional diagnostic techniques.

Bernard R. Marsh, M.D.

A more complete discussion of the experience to date of Dr. Marsh and his colleagues appears in CANCER. 30:1348, 1972.

* * *

the whole world is caving in and you're worried
about you're blanket shredding?

In Brief

New Officers

New officers for the Medical Society of Delaware for 1973-74 elected at the 184th Annual Meeting are: *William J. Vandervort, M.D.*, President; *Joseph E. Belgrade, M.D.*, President-Elect; *David A. Levitsky, M.D.*, Vice President; *Calvin B. Hearne, M.D.*, Secretary; and *Peter R. Coggins, M.D.*, Treasurer.

Officers re-elected for 1973-74 for the Sussex County Medical Society are: *Daniel A. Alvarez, M.D.*, President; *Thomas E. Dyer, M.D.*, Vice President; *Palmarin C. Francisco, M.D.*, Secretary-Treasurer.

Speakers on "Ask the Doctor"

Speakers for December, 1973 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: December 4, *Charles L. Miller, M.D.*, Learning Disabilities; December 11, *George R. Hilty, III, M.D.*, Fever in Children; December 18, *William F. Rath, M.D.*, Crossed Eyes. There will be no show on Christmas Day.

"A Doctor's Opinion"

Participants for December, 1973 on the Friday television program (8:00 a.m., Channel 5) produced by the Medical Society of Delaware are: December 7, *I. Favel Chavin, M.D.*, Joint Pain; December 14, *Bernadine Z. Paulshock, M.D.*, The Thyroid Gland; December 21, *Ronald C. Corbalis, M.D.*, Emergency Care in New Castle County.

In The News

Herman Rosenblum, M.D., Director of Pediatrics, Wilmington Medical Center, and *Paul Ramsey, M.D.*, of Alfred I. duPont Institute, won the Bronze Award for their exhibit, "The Early Detection and Treatment of Congenital Hip Dislocation," at the American Academy of Pediatrics' meeting in Chicago, October 20-25, 1973.

Judith Tobin, M.D. has been elected Chairman of the Board of Trustees of the Delaware Institute of Medical Education and Research (DIMER). *Leslie W. Whitney, M.D.* has been named the new trustee to this body from the Wilmington Medical Center.

E. Wayne Martz, M.D., President of the Delaware Heart Association, and *David J. Reinhardt, III, M.D.*, a member of the Board of Directors of both the Delaware Heart Association and the American Heart Association, were delegates at the Annual Meeting of the American Heart Association, November 10-12, 1973 in Atlantic City, New Jersey.

Daniel J. Preston, M.D. and *Charles F. Richards, M.D.* collaborated on a paper published in the June, 1973 issue of *The Surgical Clinics of North America*. The paper is entitled "The Use of Wire Mesh Protheses in the Treatment of Hernia: 24 Years' Experience." In the same issue, *Richard J. Lennihan, Jr., M.D.*, and *Martha Mackereth, R.N.* had a paper entitled "Ankle Pressure in Arterial Occlusive Disease Involving the Legs."

Mark Cohen, M.D., has drawn a number of cartoons for the *Delaware Medical Journal.*. The first one to be published appears on page 334.

Headache Award

The Ninth Annual Harold G. Wolff, M.D., Lecture Award will be awarded to the physician who submits the best original paper on headache, head pain, or on the nature of pain itself. The paper may be concerned with basic research, clinical studies, or both. All physicians, including those in training as fellows or residents, are eligible. A prize of $1,000 will be awarded to the recipient of the lectureship, and he will be invited to present the paper at the Annual Meeting of the American Association for the Study of Headache, June 22-23, 1974 in Chicago, Illinois. Papers should be submitted to Donald J. Dalessio, M.D., 8891 Nottingham Place, La Jolla, California, 92037. Deadline for submission of papers is March 15, 1974.

CLINICAL NOTICES AND MEETINGS

Proctology Seminar

The 26th Annual Congress and Teaching Seminar of the International Academy of Proctology will be held in Montreux and Zurich, Switzerland, May 3-17, 1974. Further information may be obtained by writing to Alfred J. Cantor, M.D., Executive Secretary, International Academy of Proctology, 147-41 Sanford Avenue, Flushing, New York, 11355.

New Jersey Annual Meeting

Members of the Medical Society of Delaware are invited to submit applications for space in the 1974 Scientific Exhibits of the Medical Society of New Jersey's 208th Annual Meeting. The meeting will be held May 11-14, 1974 at Haddon Hall, Atlantic City, New Jersey. The Medical Society of New Jersey provides free of charge such space as exhibitors may require, including booth with shelf, printed sign (if requested), and lights for illumination. Copies of the regulations and application for space may be obtained by writing to the Executive Offices, Medical Society of New Jersey, P.O. Box 904, Trenton, New Jersey, 08605. Applications must be submitted no later than January 1.

Pediatric Pulmonary Course

The 3rd Annual Pediatric Pulmonary Course will be held January 22-24, 1974 at Louisiana State University Medical Center, New Orleans, La. The course is sponsored by the Louisiana Thoracic Society. Tuition for the course is $90.00. For more information, write to Mr. W. Findley Raymond, Executive Director, American Lung Association of Louisiana, Inc., 333 St. Charles Avenue, Suite 1504, New Orleans, La., 70130.

Chemotherapy Course

The American College of Physicians is sponsoring a postgraduate course in Chemotherapy of Infectious Disease, January 9-12, 1973 at the University of California at San Diego. The course is acceptable for 17 hours of Category I credit for the AMA Physician's Recognition Award. For information write to the American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Childhood Cancer

The American Cancer Society's National Conference on Childhood Cancer will be held May 16-18, 1974, at the Fairmont Hotel, Dallas, Texas. This program is acceptable for fifteen credit hours in Category I for the AMA Physician's Recognition Award. For information write to the American Cancer Society, National Conference on Childhood Cancer, 219 East 42nd Street, New York, New York, 10017; or call the Delaware Division of the American Cancer Society, (302) 654-6267.

Nephrology Seminar

The Fifth Annual Postgraduate Nephrology Seminar of the American Heart Association will be held at the Shamrock Hilton Hotel, Houston, Texas, March 11-12, 1974. This year's topic will be "The Kidney in Systemic Disease." For further information, write to George E. Stewart, Jr., American Heart Association, 44 East 23rd Street, New York, New York, 10010.

Contemporary Medicine Meeting

The American Society of Contemporary Medicine and Surgery will hold its 1974 Annual Meeting February 10-16, 1974, at the Fontainbleau Hotel, Miami Beach, Florida. For information, write to Miss Virginia Kendall, A.S.C.M.W., 30 North Michigan Avenue, Room 1506, Chicago, Illinois, 60602.

Cardiac Symposium

"Dilemmas in Cardiac Diagnosis and Therapy Circa 1974," sponsored by the Colorado Heart Association, will be held March 21-23, 1974 at Snowmass Resort, Aspen, Colorado. For information on the conference write to the Colorado Heart Association, 1375 Delaware Street, Denver, Colorado, 80204. Reservations for accommodations can be made by writing to Central Reservations, Snowmass Resort Association, Box 220, Snowmass, Colorado, 81654, or calling free 800-525-4205. Reservations should be made no later than January 1, 1974.

CLASSIFIED AD SECTION

Advertisements under the Classified Ad Section are charged at the rate of 30 words or less, set solid. One insertion $4.00. Call the Journal office, 658-7596 for further information or placement. All advertisements are payable in advance. The Editorial Board reserves the right to edit copy. Closing date for new copy is the first of the month for inclusion in the current issue.

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Saturday, March 30, 1974

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Medical Journal

DECEMBER, 1973
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NUMBER 12

NEUROFIBROMATOSIS OF THE PELVIS AND BLADDER

Case Report and Review of the Literature

George A. Barbalias, M.D.

Von Recklinghausen's disease, multiple neurofibromatosis is a congenital disease, often hereditary and sometimes familial.[1] It rarely involves the urinary tract, but when it does, the bladder is the most frequent site.[2,3]

Of the 30 reported cases of neurofibromatosis of the bladder in English literature, 11 cases occurred in children. Cutaneous evidence of the disease was observed in 22 cases.[4-13]

Case Report:

A 25-year-old white male was admitted because of increased blood pressure (170/120) which was found about five years prior to admission. He had no headaches or other complaint except some difficulty initiating micturition. The past history and review of systems were otherwise non-contributory.

Physical examination showed scoliosis of the thoracolumbar spine, neurofibromata about one to two cm in size in multiple skin areas, and the characteristic café au lait spots. Elephantiasis neuromatosa changes were present on the upper third of the left leg.

Examination of the abdomen revealed a hard mass measuring 12x10x8 cm in the suprapubic region. The mass was slightly mobile and non-tender on palpation. The urinary stream was observed and found to be of decreased caliber. The presence of the mass together with the weak stream and the straining on urination led to a working diagnosis of urinary retention. The residual urine was measured and found to be 150 cc. Rectal examination revealed a normal prostate and a mass in the region of the perineum.

The remainder of the physical examination, including a fundoscopic examination, was within normal limits.

Laboratory findings: The serum creatinine was 0.6 mg/100 ml. The blood urea nitrogen was 15.5 mg/100 ml; the urinalysis was normal and a urine culture showed no organisms. Serum electrolytes, calcium, inorganic phosphorus, glucose, uric acid, cholesterol, total protein, albumin, total bilirubin, alkaline phosphatase, LDH, and SGOT were within normal limits.

Vanilmandelic acid (VMA) was 4.0 mg/24 hrs (normal). Urinary aldosterone level was 7.8 mcg/24 hrs (normal 5-19).

Chest x-rays were within normal limits.

An intravenous pyelogram revealed bilateral hydronephrosis and hydroureters to the level of the bladder. (Figure 1) At cystoscopy, a

---

Dr. Barbalias recently completed a residency in urology at the Wilmington Medical Center. He is presently in practice in Greece.

#22 F. Van Buren sound could not be introduced, and there appeared to be a mass in the region of the perineum causing a sharp angulation of the urethra. The #20 F. panendoscope was introduced under direct vision but could not be passed beyond the bulbous urethra, probably because of the distortion of the urethra by the perineal mass. A #12 F. straight catheter was introduced into the bladder, and dye was injected. The cystogram showed evidence of an abdominal mass along the left side of the bladder extending upwards about 8 cm to the level of the left sacroiliac articulation. (Figure 2)

Surgical exploration was decided upon because of the need to establish a tissue diagnosis, to rule out obstruction above the level of the bulbous urethra, and to determine a possible relation of the suprapubic mass to the ureterectasis and hydronephrosis.

Operation

The bladder was exposed via a midline vertical incision. The suprapubic mass noted on physical examination involved the left side of the bladder and extended to the entire left side of the pelvis and iliac vessels. The bladder neck was open. Both ureteral orifices were seen to be raised on small mounds, and the entire trigone was firm to palpation and found to be elevated. The tissue around the orifices was very fibrous and firm to palpation. Their openings were pinpoint in size, and a forceful jet was noted to squirt from each orifice. Ureteral catheters (4F) were passed into the renal pelves bilaterally through the orifices with some difficulty. Using the catheters as guides, ureteral meatotomies were performed. The tissue was very firm and fibrous, and two sections removed in a wedge fashion were sent for examination. Rubber catheters (8F) were left for drainage; both were brought suprapubically with a 24F cystostomy tube. The splints were removed ten days later, and the patient was discharged with the suprapubic cystostomy in place.

Microscopic examination of the specimens revealed unencapsulated masses of tissue composed of thin wavy nuclei, some in parallel formation in a pale-staining matrix, partially collagenized, but mainly edematous and without Verocay bodies. The microscopic diagnosis was neurofibroma. (Figure 3)

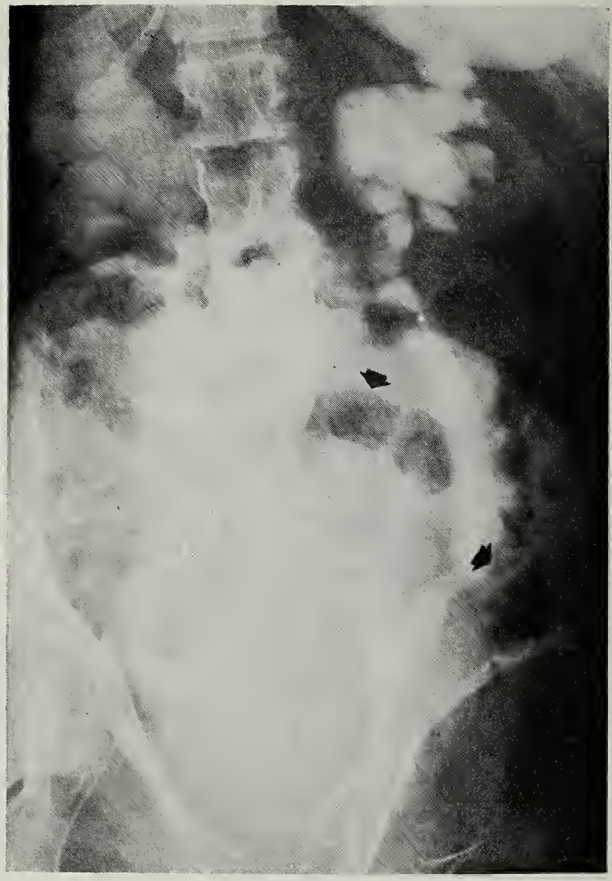

FIGURE 1

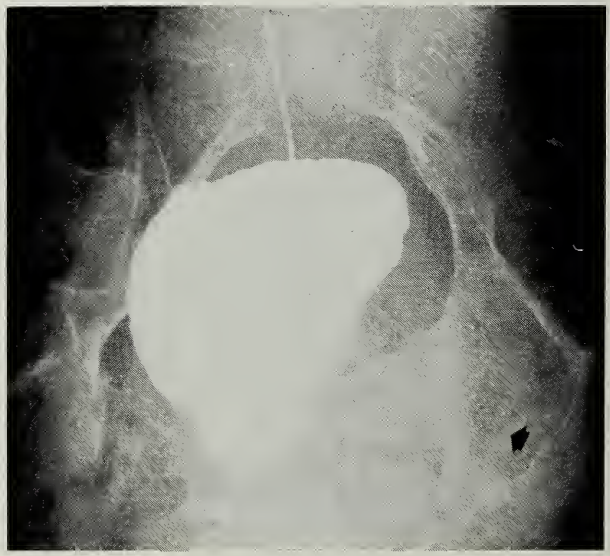

FIGURE 2

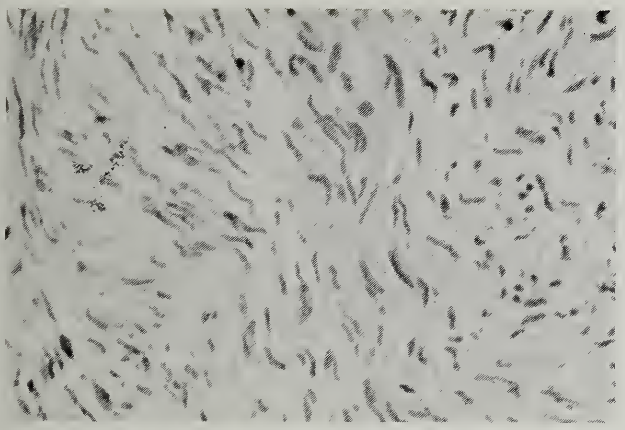

FIGURE 3

Discussion

Neurofibromatosis is characterized by tumor formation of the peripheral nerves and areas of increased pigmentation of the skin (café au lait spots). The incidence has been estimated to occur in from once in every 2,000 to once in every 4,000 births. It is equally reported in the negro and in the white races.[14,15] Von Recklinghausen's disease is an inherited dysgenesis transmitted as a Mendelian dominant, often as an incomplete or abortive form.[16] Borberg incriminated hereditary factors in 20% of the reported cases.[17]

Sometimes an entire nerve trunk with its branches is involved (plexiform neuroma). The most frequent bone involvement produces scoliosis, but subperiosteal cysts, localized osteoporosis, gigantism of one bone, pseudoarthrosis, and subperiosteal tumors have been reported. Involvement of the gastrointestinal tract, though rare, is much more frequent than of the urinary tract. Two cases reported by Labardini and coworkers in 1967 had plexiform neuromas of the prostate gland and neurofibromatosis of the scrotum and perineum.[2] An occasional association of the disease with pheochromocytoma has been reported. In this case the VMA and metanephrines were examined and were within normal limits.

Malignant change to sarcoma is reported in from 5% to 16% of the cases, and this usually involves deeper structures. The disease progresses, but it may remain stationary for years. Puberty and pregnancy seem to provide a growth stimulus.[18] The majority of authors agree that a biopsy of a benign lesion may accelerate its growth or cause sarcomatous transformation. Elephantiasis neuromatosa is a result of a diffuse overgrowth with the appearance of heavily pigmented skin, which hangs in folds. This was observed in our case.

If a patient with known cutaneous neurofibromata presents with symptoms related to the urinary tract, vesical neurofibromatosis, though rare, should be suspected. The most frequent causes of death in patients with Von Recklinghausen's disease are sarcoma and cardiovascular complications and, less frequently, development of brain tumor.[15] Deniz quotes Hendrickson as suggesting preoperative use of cobalt radiation to facilitate future surgery in cases of pelvic neurofibromatosis.[4] Total cystectomy with ileal loop urinary diversion or bilateral cutaneous ureterostomy if the ureters are markedly dilated seems to be the treatment of choice. Troublesome bleeding due to the high vascularity of these lesions during cystectomy has been reported.[19,20] Ligation of the internal iliac arteries will decrease the blood loss during the resection in good surgical risk patients.

In our case, because of the extension of the tumor to the iliac vessels, we did a temporary splinting of the ureters, ureteral meatotomies, and a suprapubic cystostomy. The patient is doing well now and has had no further deterioration of renal function. If his renal function begins to decline or the hydronephrosis does not improve we plan to perform an ileal loop or create cutaneous ureterostomies, considering the degree of the ureterectasis.

Summary

A case of multiple neurofibromatosis with bladder involvement causing bilateral hydronephrosis and hydroureters is presented. The literature on this subject is reviewed.

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* * *

Highlights

ALLERGIES AND THE ADOLESCENT

LEONARD H. SELTZER, M.D., *Assistant in Department of Pediatrics, Wilmington Medical Center. President at the Wilmington Medical Adolescent Conference, August 14, 1973.*

Adolescence is a critical time in the life of the allergic patient. During this time about one-third get better, perhaps secondary to hormonal stimulation. Another third may become worse despite hormonal stimulation or, it is postulated, because of retardation of puberty secondary to chronic illness. The last third stay relatively the same.

The hallmarks of allergy care are environmental control, avoidance of allergens, medication for symptomatic control, and hyposensitization. The teenager will have difficulty with all of these areas. Let us examine why he may not be able to cooperate.

Parent-Child Relationship

The allergic adolescent finds himself halfway to adulthood. Often, the parent is keeping the child dependent. As an example, in your office the parent may not let the patient answer questions and will interrupt to insert his own observations or perhaps to ventilate family problem areas. It is therefore usually necessary to interview parents and teenagers separately.

Peer Group Isolation

Frequently his symptoms may cause the adolescent to be removed from an activity or to perform badly in it. The necessity for avoidance of an allergen may prevent participation, or during an activity the patient may have to stop to take medication from a peculiar-looking inhaler. The introspective adolescent may be perfectly accepted by peers despite this but will view his atopic condition as a cause of alienation.

In asthmatic teenagers there is a bell-shaped curve of severity. Even in a population of asthmatics the asthmatic teenager may be different from his peers.

Rebellion

The adolescent may feel a sense of rebellion against his parents and against the physician, a parental figure. The adolescent may disobey instructions for activity limitation, environmental control, and allergen avoidance, and he may refuse medications. He may distort the severity of symptoms when relating

FIGURE 1

SYSTEMATIC APPROACH FOR THE MODIFICATION OF BRONCHIAL ASTHMA*

POSITION ON THE LADDERS THERAPEUTIC		GROUP	FREQUENCY OF ATTACKS	TYPE	FUNCTIONAL IMPAIRMENTS	GRADE	PATHOPHYSIOLOGICAL DERANGEMENTS	STAGE	THERAPEUTIC REQUIREMENTS
FAILURE DOWN	GOAL NORMAL	0	Potential Asthmatics (0-3 attacks per life)	0	Athletic Activities Performable	0	Reversed Reactivity	0	Immunotherapy may still be necessary
	▲	1	1-3 per year	1	Adult Living Activities Tolerated	1	Membrane Disease	1	Anti-Mediator Medicatian
		2	4-6 per year	2	Ascending Activities Curtailed	2	Asymptomatic Hyperinflation	2	Aminophylline Recommended (8-15 mg/kg/day)
TO	TO	3	7-12 per year	3	Speed of Walking Reduced	3	Mild Brancho-spasm	3	Aminophylline Dependent (16-30 mg/kg/day)
		4	13-24 per year	4	Distance of Walks Shartened	4	Moderate Bronchial Tissue Reaction	4	Ephedrine and Aminaphylline Dependent
▼		5	Weekly	5	Dyspneic on any Exertion	5	Severe Lower Airway Obstruction	5	Steroid Dependent
SEVERE ILLNESS	UP	6	Daily	6	Canstant Dyspnea	6	Acute Ventilatory Failure	6	Controlled Ventilation

*Mansmann, H. C., Jr., The Evalutian and Modification of Intractable Bronchial Asthma, Hahnemann Medical Symposium "Pulmonary Care in the 1970's," 1972.

information about them. Often the question of improvement of symptoms by the drugs prescribed is disputed by parent or child.

By the time adolescence is reached in the patient with bronchial asthma some degree of irreversibility is often found. It is therefore important to document the level of impairment and stage of illness of the patient, particularly since adolescence is a period when a great deal of change in severity may be seen. The patient's position on the ladder between therapeutic goal and therapeutic failure may produce altered pathophysiologic derangements and changing functional impairment and may dictate new therapeutic requirements. (Figure 1) Frequence and severity of attack, are good indices to watch in this spectrum.

Whereas one should be wary of drawing a comparison between allergic manifestations and bronchial asthma, it is sound to say that one must view allergies in terms of a ladder on which one moves up and down as life processes change. Treatment differences are not dictated only by symptom severity but by needs of current lifestyle also.

⁂

PHYSICAL AND PSYCHOLOGICAL DIAGNOSIS

> . . . a high proportion of patients seen by general practitioners, as well as by physicians and even by surgeons, are suffering from predominately psychological or psychosocial disturbances, and it is commonly difficult to recognize these, as they present with physical or somatic symptomatology.
>
> *Francois Mai*
>
> The Medical Journal of Australia, 1:1314-1318, 1972.

PROCEEDINGS OF THE

HOUSE OF DELEGATES, 1973

MEDICAL SOCIETY OF DELAWARE

The 184th Annual Session of the House of Delegates, Medical Society of Delaware, was called to order at John M. Clayton Hall, Newark, Delaware, on Friday, October 26, 1973, at 2:00 P.M., Joseph A. Elliott, President, presiding.

Secretary Abbiss took the roll call and a quorum was declared.

A motion was made, seconded, and approved to accept the minutes of the 1972 Session as published in the *Delaware Medical Journal.*

(All reports were accepted as published.)

REPORTS OF THE OFFICERS

REPORT OF THE PRESIDENT

I have a few comments concerning our year. You will hear from our chairmen of Commissions, Doctors Wendel and Abbiss, and also if you wish from the various committee chairmen when their specific reports are presented.

I am sure our distinguished guests from our neighboring states will hear the same problems their own states have. Down in Sussex County, we say Delaware has three counties "when the tide is out." So perhaps our problems will be less in scope than yours.

It would be remiss of me to ignore the many selfless members of our Society who have given of their time so tirelessly. These are our cohesive forces that make the Medical Society of Delaware an effective agent of organized medicine in Delaware.

Well, what have we done? Have we accomplished anything? Are we going to accomplish anything further? What lies ahead?

In December of 1972 we began what eventually became a battle of sorts. This concerned chiropractic practice. Our opponents were Blue Cross and Blue Shield of Delaware, Inc. (at times), the Insurance Committee, some politicians, and the chiropractic lobby, which is exceptionally well organized. Our attitude was specifically stated in December and is that the Medical Society of Delaware is unalterably opposed to the inclusion of chiropractic in any Blue Cross and Blue Shield contract. In the spring, the State of Delaware voted to include chiropractic coverage in the contract of state employees. It was and is our opinion that a substantial number of those employees will not use or want chiropractic services and thus are paying for a service not asked for. The next discussion and reevaluation of this program will be in March with Blue Cross and Blue Shield and the Insurance Commissioner.

The Society was successful in defeating a bill in the State Legislature that would have permitted payment to chiropractors. The bill had only its two sponsors in favor of it.

Details of some of these things are in the reports following. It is Doctor Vandervort's opinion that our objection to further chiropractic encroachments should begin now, and we should not wait to hastily collect a delegation to go to the State Legislature when some bill is going to be voted on.

Another item with which we were faced at every meeting is the Delaware Foundation for Medical Care, which in its present form includes two primary objectives: (1) The Pilot Study to include health care delivery to two segments of our population — selected Blue Shield and Medicaid groups. The purpose is to try and find out whether health care delivery can be more effectively made than by our conventional means, and (2) PSRO — which the Foundation would like to have as another one of their duties. Further discussion of this controversial problem and perhaps a final solution will occur this afternoon when the Commission Chairman comes to this.

So that I won't be the chief offender in using up a lot of time, let me enumerate some more things that have been accomplished.

1. We have accepted a format presented by Doctor William Duncan for a documentation and certification program in continuing education. Distribution of these forms has been made to members.
2. We have voted to continue to support the PRO Fund as the Society's Keogh Retirement Fund.
3. The Medical Society of Delaware voted for a better liaison system with their legislators. We have

friends of medicine in the Legislature; hopefully this will continue.

4. The Society now has insurance to cover physicians serving on committees from suit.

5. We have passed a motion in the Board of Trustees that credit cards found acceptable by the Society be endorsed as an acceptable method of payment for physicians' services. This became significant as an interim measure when we were considering cancelling contracts with Blue Cross and Blue Shield in the chiropractic furor. It is still with us, and discussion concerning credit cards is anticipated this afternoon.

After several years in the writing, the draft of the Medical Practice Act was accepted by the Board of Trustees.

A lot of things are in the offing. Despite our differences about who is going to direct the PSRO activities, PSRO is coming soon and we will have to implement it.

The late Walt Kelly had one of his cartoon characters say, "We have met the enemy and he is us." This is my plea for constructive discussion this afternoon and a plea against endless arguments.

Joseph A. Elliott, M.D.
President

REPORT OF THE SECRETARY

One hundred meetings including today's meeting were held during this past year. Eleven meetings were devoted to the transaction of business matters by the Board of Trustees; in addition, there were eighty-four committee meetings for which preparations were made by the Society office. There were a seminar at the University of Delaware entitled "Medical Aspects of Sports," a Sickle Cell Disease Seminar, a Medico-Legal Symposium, and a Diabetes Symposium. The dinner dance will be held October 27th at Wilmington Country Club. All business transacted by the Society has been recorded in the minutes as presented by the Secretary.

The total membership as of October 1 is as follows:

1973

	Dues-Paying Members	Dues-Exempt Members	Total
Kent	48	6	54
New Castle	392	61	453
Sussex	68	8	76
	508	75	583

1972

	Dues-Paying Members	Dues-Exempt Members	Total
Kent	48	5	53
New Castle	382	58	440
Sussex	64	12	76
	494	75	569

The Society has had inquiries from 63 out-of-state physicians, nurses, and a physician's assistant seeking placement in Delaware plus 36 inquiries received via AMA. The office has corresponded with these persons and acted as the liaison between them and local physicians who are seeking associates or aides. Complimentary ads have been placed in the *Delaware Medical Journal* for doctors seeking local opportunities. The office requests that doctors who are seeking associates so inform it.

Joseph W. Abbiss, M.D.
Secretary

REPORT OF THE TREASURER

The report of the Treasurer for 1972-73 is in two sections. The first consists of a statement of income and expenses for the twelve months of calendar 1972. This has been prepared by Haggerty and Haggerty, certified public accountants, and is presented from their 1972 audit of the Society's accounts. The audit consists of a combined statement of the financial condition at December 31, 1972, comparative statements of cash receipts and disbursements for the years ended December 31, 1972 and December 31, 1971, budgetary statement of revenue and expenditures for the year ended December 31, 1972, statement of cash receipts and disbursements for the year ended December 31, 1972, and a statement of securities owned at year's end and income therefrom during the year.

This examination was made in accordance with generally accepted auditing principles and accordingly included all procedures felt necessary in the circumstances.

Cash in banks, recorded receipts and disbursements, income earned on securities owned during the year were all verified by references through proper channels.

Part II of this report is a statement of income and expenses for the first nine months of 1973 and has not yet been audited for the year. A review of the expenses of the first nine months of the current administrative year and an estimation of the expenses for the final three months indicate that the individual budget accounts are sound.

Increase in the following occurred as was anticipated: executive and general personnel level salaries, taxes, utilities, insurance, rent and service maintenance charges, etc.

The employees' retirement plan was selected and made operational during the year. The stock investment plan was not changed in any way.

Since the last meeting, your treasurer attended three PRO Fund Board Meetings as a member of the PRO Fund Advisory Board.

PART I

GENERAL FUND BUDGETARY STATEMENT OF REVENUE AND EXPENDITURES FOR THE YEAR ENDED DECEMBER 31, 1972

Revenue:	Realized
Operating:	
Dues	$ 63,700.00
Dividends and interest	7,702.54
	$ 71,402.54
Contra:	
AMA dues	$ 42,185.00
DMJ subscriptions	2,964.00
Scholarships	2,475.00
AMA dues rebate	437.25
Annual meeting:	
Exhibits	3,060.00
Banquet ticket sales	5,407.04
Grants	2,180.00
Reimbursed expenses	6,516.67
Rosters	1,248.50
House of Delegates	430.00
Leadership seminar	219.50
	$ 67,122.96
TOTAL REVENUE	$138,525.50

Expenditures:	Expended
Operating:	
Salaries	$ 41,825.90
Employer taxes	1,674.04
Employee benefits	2,969.76
Hospitalization	1,945.63
	$ 48,415.33
Office operation:	
Contribution to Academy	$ 3,638.00
Printing, postage & stationery	4,423.36
Telephone and telegrams	1,319.81
Audit	475.00
Office expenses	1,231.15
Insurance	261.00
	$ 11,348.32
Travel:	
AMA delegate	$ 1,590.52
Contingency (officers—staff)	3,018.17
	$ 4,608.69
Contributions, dues & subscriptions:	
Delaware Public Health Association	$ 20.00
Blood Bank	301.00
AMA—Aces and Deuces	75.00
Delaware Better Business Bureau	50.00
Delaware State Chamber of Commerce	100.00
Presidents and presidents-elect	50.00
Contingency contributions	268.00
	$ 864.00
Committees and contingency fund	$ 8,192.89
Miscellaneous	$ 53.25
Contra:	
AMA dues	$ 41,525.00
AMA dues rebate	423.70
Scholarships	2,500.00
DMJ subscriptions	2,874.00
Annual meeting	11,638.50
Reimbursed expenses	8,604.22
Rosters	602.56
	$ 68,167.98
TOTAL EXPENDITURES	$141,650.46

	General Fund	
	WSFS	Artisans
Balances, January 1, 1972	$ 8,712.40	$620.57
Receipts:		
Interest earned	$ 1,419.98	$ 61.99
Transfers	45,060.00	....
	$46,479.98	$ 61.99
	$55,192.38	$682.56
Disbursements:		
Transfers	$46,000.00	$682.56
Balances, December 31, 1972	$ 9,192.38	$ ....

Statement of Securities Owned at December 31, 1972 and Income Therefrom During the Year

Face Value and/or Shares	Stocks	Book Value 12-31-72	Market Value 12-31-72	Dividends Exhibit B
117	Bank of Delaware, capital, par $10.00	$ 1,520.53	$ 4,358.25	$ 321.75
120	Continental American Life Insurance Co., par $10.00	1,130.50	3,690.00	168.00
40	E. I. duPont de Nemours & Co., $4.50 pfd., no par	4,741.03	2,800.00	180.00

20 Eastman Kodak Co., par $2.50	1,377.00	2,967.50	27.40
200 Farmers Bank of the State of Delaware, capital, par $5.00	1,013.94	3,800.00	200.00
24 General Motors Corp., $5.00 pfd., no par	2,839.04	1,860.00	120.00
50 Minnesota Mining & Manufacturing Co., no par	4,277.69	4,281.25	119.32
50 Texaco, Inc., par $6.25	4,045.28	1,875.00	206.00
100 Warner-Lambert Co., par $1.00	4,078.69	9,750.00	167.50
	$25,023.70	$35,382.00	$1,509.97

NOTE: There were no changes in securities during the year under review.

Loan to the Delaware Medical Journal	$5,000.00
Balance, Checking Account WSFS, December 31, 1972	$1,481.41

INTERIM TREASURER'S REPORT
OCTOBER 1, 1973

Checking Account — Balance, December 31, 1972			$ 1,481.41
RECEIPTS:			
Dues	$64,449.50		
Income from Investments	967.99		
Addressograph	15.00		
		$ 65,432.49	
Annual Meeting			
Exhibits	$ 1,700.00		
Grants	2,618.07		
Ticket Sales	820.00		
Miscellaneous	6.00		
		$ 5,144.07	
Contra			
AMA Dues	$43,340.00		
Kent County Dues	1,000.00		
Sussex County Dues	690.00		
Delaware Medical Journal	3,105.00		
Scholarships	2,502.50		
Dues Rebate	424.60		
		$ 51,062.10	
Reimbursed Expense		$ 2,604.27	
TOTAL RECEIPTS			$124,242.93
Transfer for Interest			$ 48,000.00
DISBURSEMENTS			
Salaries and Employer Taxes	$30,395.96		
Employee Benefits	1,724.78		
Office Expense (Stationery, Printing, Insurance, Postage, Service Contracts, Petty Cash)	8,116.54		
Travel, AMA Delegate and Contingency	2,357.62		
Committees and Contingency	5,055.02		
Woman's Auxiliary	300.00		
Periodicals	108.70		
Audit	575.00		
Miscellaneous (Office)	226.25		
Contributions, Dues, Legal Counsel, Blood Bank, and Rent	4,790.68		
		$ 53,650.55	
Contra			
AMA Dues	$43,340.00		
Sussex County Dues			
Kent County Dues	1,000.00		
Scholarship			
Annual Meeting	386.50		
Delaware Medical Journal	3,105.00		
		$ 47,831.50	
Reimbursable Expense		$ 6,937.41	
(1972 AMA Dues Disbursed)	$ 550.00		
(1972 AMA Dues Rebate)	$ 311.30		
TOTAL DISBURSEMENTS			$109,280.76
Transfer for Interest			$ 57,020.00
BALANCE, October 1, 1973, Checking Account — WSFS			$ 7,423.58

Savings Account #1	$ 8,797.77
Savings Account #2	$ 6,094.36
Loan to the Delaware Medical Journal	$ 5,000.00

Conley L. Edwards, M.D., *Treasurer*

REPORTS OF THE STANDING COMMITTEES

BUDGET COMMITTEE

The Budget Committee of the Medical Society of Delaware met on September 14, 1973 and approved the budget submitted with this report.

The Medical Society stayed within the budget for the current year, 1972-1973. The Committee therefore recommends that dues be maintained at the same level for next year and that the Society stay within the same budget for the 1973-1974 year.

BUDGET
1973-1974

RECEIPTS		
Dues		$64,750
Dividends and Interest		7,607
TOTAL RECEIPTS		$72,357
CONTRA RECEIPTS		
Kent County	$ 1,000	
Sussex County	700	
AMA Dues	43,500	
AMA Dues Rebate	424	
Scholarships	2,510	
DMJ Subscription	3,105	
Annual Meeting		
Grants	1,880	
Exhibits	2,975	
TOTAL	$56,094	
CONTRA DISBURSEMENTS		
Kent County	$ 1,000	
Sussex County	700	
AMA Dues	43,500	
AMA Dues Rebate	424	
Scholarships	2,510	
DMJ Subscription	3,105	
Annual Meeting	4,855	
TOTAL	$56,094	
DISBURSEMENTS		
Employee Benefits	$ 3,000	
Salaries	40,500	
Employer Taxes	1,800	
Hospitalization	1,575	
Office Operation		
Contribution to Academy	$ 4,400	
Contribution to Academy (Special)	500	
Printing, Postage, Stationery	6,000	
Telephone-Telegrams	1,200	
Audit	500	
Office (including part-time office help)	750	
Insurance and Contracts	1,800	
		$62,025
Travel		
Contingency		
AMA Delegate	$ 1,000	
(Officers-Staff)	3,000	
		$ 4,000
Subscriptions, Contributions, Dues		
Wall Street Journal	$ 35	
Delaware Public Health Assn.	15	
Blood Bank	300	
AMA-Aces and Deuces	50	
Delaware Better Business Bureau	50	
Medical Society Executive Assn.	50	
Delaware State Chamber of Commerce	75	
Presidents and Presidents-Elect	25	
Contributions-Woman's Auxiliary	300	
Continuing Education Seminars	1,000	
Washington Report	35	
Delaware State News	27	
News-Journal	39	
Morning News	39	
		$ 2,040
Legal Counsel		$ 2,000
Committees and Contingency Fund		$ 2,292
TOTAL DISBURSEMENTS		$72,357

Conley L. Edwards, M.D., *Chairman*

A. E. Bacon, Jr., M.D.	**L. Katzenstein, M.D.**
J. A. J. Forest, Jr., M.D.	**R. W. Powell, M.D.**
C. E. Graybeal, M.D.	**T. S. Vates, Jr., M.D.**

MEDICAL SERVICES INSURANCE COMMITTEE

The committee met several times in the past year to discuss general ways in which third party payers, particularly Blue Cross-Blue Shield of Delaware, Inc., and physicians in Delaware can work together in closer harmony. Several projects are on the boards including shortened forms for high volume offices, assignment by the patients of payment to non-participating physicians, and the development of codes which will differentiate fees for major and lesser procedures.

We shall continue to try to represent physician goals in regards to third party payers, and to try to understand the insurance companies' difficulties. Insofar as possible we will bring these disparate views together to form a more pleasant economical environment in Delaware.

R. Walter Powell, M.D., ***Chairman***
C. L. Edwards, M.D., ***Vice-Chairman***

J. A. Arminio, M.D.
J. Beebe, Jr., M.D.
J. H. Benge, M.D.
I. F. Chavin, M.D.
N. A. deLeeuw, M.D.
J. J. Egan, M.D.
R. E. Erb, M.D.
J. A. J. Forest, Jr., M.D.
J. Gelb, M.D.
M. Gibbs, M.D.
C. E. Graybeal, M.D.
J. T. Hogan, M.D.
S. R. Kaplan, M.D.
N. Kuseybi, M.D.
A. Lazarus, M.D.
J. M. Levinson, M.D.
M. J. McDermott, Jr., M.D.
R. L. Meckelnburg, M.D.
W. W. Moore, M.D.
C. P. Papastavros, M.D.
E. M. Phillips, D.O.
D. Platt, M.D.
O. Sluzar, M.D.
H. Taylor, M.D.
I. J. Tikellis, M.D.
L. W. Whitney, M.D.
H. Wilk M.D.
A. A. Golden, D.O., Representative from the Delaware State Osteopathic Medical Society

MEDICAL REVIEW COMMITTEE

The Medical Review Committee, a subcommittee of the Medical Services Insurance Committee, concerned itself again this year with individual fee problems which were brought to the committee by the Blue Cross-Blue Shield consultant, the individual physician, or various commercial insurance providers.

Several physicians presented their problem by a personal appearance before the committee.

During the year three meetings were held with a total of eighteen Blue Cross-Blue Shield, Medicaid, or Medicare problems considered and approximately an equal number of commercial carrier problems evaluated.

In addition to the above, approximately 50% of the committee's work consisted of evaluating claims for new operative procedures and arriving at a standard for payment for these procedures. These were in the areas of Orthopedics, Neurosurgery, and Cardiac Diagnostic procedures. A great deal of work remains to be done in these areas.

It is evident that the Prevailing Fee Program, especially as it applies to the 80% or the 100% coverage rate, has reduced the number of conflicts between the Plan and the participating physician when compared to the committee's work prior to this program.

In submitting this report, the Chairman wishes to extend his thanks to each member of the committee for the time-consuming and thoughtful deliberation given during the year.

Conley L. Edwards, M.D., ***Chairman***
R. W. Powell, M.D., ***Vice-Chairman***

D. A. Alvarez, M.D.
J. L. Campbell, M.D.
I. F. Chavin, M.D.
F. B. L. Haines, M.D.
J. T. Hogan, M.D.
A. Lazarus, M.D.
J. M. Levinson, M.D.
W. W. Moore, M.D.
E. M. Phillips, D.O.
D. Platt, M.D.
L. W. Whitney, M.D.

PEER REVIEW AND PROFESSIONAL EVALUATION COMMITTEE

There were three meetings of the Peer Review and Professional Evaluation Committee during the past year, two being held in Wilmington and one in Dover. Briefly, the State committee is composed of a State chairman and all the members of the three County committees. It should be pointed out that attendance and member activity of the entire committee have been excellent.

In the early part of the year the Board of Trustees directed us to develop a design for PSRO. Many weeks were spent in this endeavor, but finally this was turned over to another committee.

One of the major tasks performed this year was the development of specialty peer review groups to assist the county committees in their deliberations. Nine of the specialty organizations responded, and several times during the year they were called upon. This is an excellent example of how important peer review is considered to be by all physicians.

A continued close relationship was maintained with the Delaware State Osteopathic Medical Society. In addition, there have been several meetings with members of the Delaware State Board of Pharmacy, and in the near future we hope to establish ongoing liaison with the Peer Review group of the Delaware Pharmaceutical Society.

Part of the mandate of this committee is to continually review and update our Guidelines. Only one change was made during the past year, and it concerned a change in Guideline #4. The original Guideline was as follows:

> If a patient in a hospital has been operated upon by an out-of-*town* surgeon and continuing medical care while in the hospital is indicated, it is proper for the family physician to be reimbursed for daily visits to this patient if he feels these are medically necessary. These daily visits, however, are not to exceed the normal length of hospital stay for the particular diagnosis in question, and visits beyond this would require documentation of medical necessity for further reimbursement.

The changed Guideline #4 will be as follows:

> If a patient in a hospital has been operated upon by an out-of-*hospital area* surgeon and continuing medical care while in the hospital is indicated, it is proper for the family physician to be reimbursed for daily visits to this patient if he feels these are medically necessary. These daily visits, however, are not to exceed the normal length of hospital stay for the particular diagnosis in question, and visits beyond this would require documentation of medical necessity for further reimbursement.

Finally, only one new guideline has been submitted for approval by the House of Delegates. It is Guideline #11: Documentation on the patient's chart of the indications for surgical or diagnostic procedures is not an unreasonable request and is consistent with good medical care. The committee moves its adoption.

Henri F. Wendel, M.D., ***Chairman***

L. M. Baker, M.D.
S. W. Bartoshesky, M.D.
J. H. Benge, M.D.
J. F. Gehret, M.D.
R. B. Glidden, M.D.
D. A. Levitsky, M.D.
A. Mansoory, M.D.
E. R. Miller, Jr., M.D.
C. M. Moyer, M.D.
W. Omans, M.D.
W. P. Portz, M.D.
D. J. Reinhardt, III, M.D.
D. T. Walters, M.D.
C. A. Depfer, D.O., Representative from the Delaware State Osteopathic Medical Society

PROGRAM COMMITTEE

The Program Committee met on December 13, 1972 and January 23, 1973 and decided on the following program:

Hormonal Profiling in the Diagnosis and Treatment of Essential Hypertension — John H. Laragh, M.D., Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons.

Thyroid Disease 1973: Diagnosis and Therapy — Herbert A. Selenkow, M.D., Director, Thyroid Laboratory, Peter Bent Brigham Hospital; Associate Professor of Medicine, Harvard Medical School.

Small Vessel Disease of the Gut — Howard M. Spiro, M.D., Professor of Medicine, Yale University School of Medicine.

The Etiology and Treatment of Shock Due to Low and High Flow States — Richard C. Lillehei, M.D., Professor of Surgery, Department of Surgery, University of Minnesota Health Sciences Center.

Robert B. Flinn, M.D., ***Chairman***

C. Allen, M.D.
B. Z. Paulshock, M.D.
W. P. Portz, M.D.
D. N. Sills, Jr., M.D.

PUBLIC LAWS COMMITTEE

The Public Laws Committee met eleven times since the last Annual Meeting of the Society. Several meetings were spent reviewing the proposed Medical Practice Act. Approximately seventy pieces of legislation were reviewed by the Committee and recommendations thereon forwarded to the Board of Trustees.

Allston J. Morris, M.D., ***Chairman***
Gerald J. Savage, M.D., ***Vice-Chairman***

J. W. Alden, Jr., M.D.
J. E. Belgrade, M.D.
R. J. Bishoff, M.D.
N. L. Cannon, M.D.
R. C. Corbalis, M.D.
E. S. Dennis, M.D.
L. M. Dobson, M.D.
C .R. Donoho, M.D.
E. F. Gliwa, M.D.
A. Z. Hameli, M.D.
R. C. Hayden, M.D.
C. B. Hearne, M.D.
K. K. Kimura, M.D.
V. G. J. Lobo, Jr., D.O.
M. J. McKusick, M.D.
P. J. Mette, M.D.
J. C. Bradford, Jr., D.O.
C. A. Depfer, D.O.
Representatives of the Delaware State Osteopathic Medical Society

BOARD OF TRUSTEES LIAISON TO THE PUBLIC LAWS COMMITTEE

Last year's report suggested that change was needed in the Public Laws Committee; however, the membership of our Medical Society did not respond to this suggestion. All of this suggests that major change is not desired. The committee remains as ever a dedicated group of physicians steadfastly backing their conviction to aid in formulating laws that serve to protect the public interest in the health field.

This year the Public Laws Committee improved its mobility, not by changing its meeting site location, but by having more round table discussions with invited members of the General Assembly than heretofore.

It is hoped that the new Public Laws Committee will organize earlier this year in an effort to sound out interested General Assemblymen on bills that are to be presented by the next General Assembly after January 1, 1974.

Rhoslyn J. Bishoff, M.D.
Board of Trustees Liaison

PUBLICATIONS COMMITTEE

The past year was marked by the retirement from the Editorial Board of William O. LaMotte, Jr., M.D. and Dewey A. Nelson, M.D. and the new appointments of Mark G. Cohen, M.D. and William V. Whitehorn, M.D. During the year, as in the past several years, there were several reprints of *Journal* editorials by the News Journal. The Editorial Board and others preview and critique all manuscripts before publication, and we particularly thank them.

Emphasis on the publication of papers delivered by or to Delaware medical audiences continued. The second annual award for the best paper by a Delaware house officer was presented to Doctors Michael B. Peters and Joseph J. Schulz for their paper, "Fat Embolism, Pathogenesis and Proposed Protocol for Monitoring and Treatment," which will appear in a fall issue of the *Journal.*

The *Journal* is indexed in the major medical indices, and thus, despite its limited circulation, authors receive requests from many persons in this country and abroad. However, the *Journal's* main purposes for existence are the edification and pleasure of the members of the Medical Society of Delaware; thus we repeat our annual invitation to all our readers to communicate their opinions and criticism to the editorial staff.

Mrs. Henrietta Moore again receives our thanks for her invaluable and devoted attention to the myriads of details involved in the publication of a monthly journal. We also thank Mrs. Anne Bader who takes care of the business and financial end, an increasingly difficult task as a result of a decline in drug advertising by national drug companies. (Physicians who have suggestions for local advertisers are invited at any time to refer them to the *Journal* via the Medical Society of Delaware.) Mrs. Sylvia Grossman assumed the job of *Journal* typist and proofreader during this past year, and to her we say welcome.

Robert B. Flinn, M.D., ***Chairman***
J. W. Abbiss, M.D. **K. K. Kimura, M.D.**
W. J. Holloway, M.D. **B. Z. Paulshock, M.D.**

DELAWARE MEDICAL JOURNAL STATEMENT OF RECEIPTS AND DISBURSEMENTS

	Year Ended Dec. 31 1972	Jan. 1- Oct. 1 1973
Total Receipts	$30,922.64	$18,944.42
Total Disbursements	$36,172.62	$18,245.47
Excess revenue over expenditure	–$ 5,249.98	$ 698.95
Savings Account # 1	$ 8,797.77	$ 8,797.77*
Savings Account #2	$ 3,069.95	$ 3,069.95*
Due to General Fund	$ 5,000.00	$ 5,000.00

Anne Shane Bader, ***Business Manager***

*1973 interest will be added at end of year.

THE AMA DELEGATE

The 122nd Annual Convention of the AMA was held in New York City from June 24-28, 1973. Both Drs. Wm. O. LaMotte and Henri F. Wendel were in attendance. Dr. LaMotte sat as the delegate for the first 2½ days, and then turned the seat over to Dr. Wendel for the final 2½ days. It should be pointed out at the start of this report that much distress was voiced by many, many other state delegates at the departure of Dr. LaMotte from their midst. I need not expound on the many compliments extended to Dr. LaMotte for his past work in organized medicine — we are all familiar with his accomplishments.

There were 179 resolutions and 84 reports acted upon by this House of Delegates. I shall attempt to review briefly the salient actions.

Five large subject areas shall be used to summarize the actions of the House; i.e., Physicians and Government; Physicians and Hospitals and Medical Schools; Physicians and the Public; Association and Internal Matters of the House; and Miscellaneous.

Physicians and Government

Many hours were spent on PSRO. The Board of Trustees pointed out their efforts in providing input into the drawing up of PSRO regulations by the government. A resolution was adopted that directed HEW to use only physicians who could be qualified in doing peer review to administer the PSRO organizations; it also suggested that presently functioning physician peer review groups be used wherever possible to prevent costly duplication of effort.

Efforts of the AMA re wage-price controls should be intensified to do away with discrimination against physicians.

With respect to FDA drug regulations, the House adopted a resolution that directs the AMA to continue to protest proposed and current regulatory activities that have the effect of restricting use of prescription drugs.

It was also urged to continue efforts to develop a uniform claim form for insurance claims.

Physicians, Hospitals, and Medical Schools

The House adopted a report of the Board of Trustees which calls for the AMA to oppose the extension of institutional licensure in lieu of individual professional licensure to physicians and nurses.

Resolution 50 called for the AMA to express its reservations about the potential of the Quality Assurance Program of the American Hospital Association to bring lay control of peer review.

Illinois protested unilateral changes in medical staff by-laws by hospital boards of trustees that usurp the prerogatives of hospital medical staffs. The House approved a substitute resolution calling for (1) increased medical staff representation on hospital boards; (2) state and local medical society efforts to remove barriers to such representation; and (3) the JCAH to ascertain from its inspectors the effectiveness of communications between hospital governing boards and medical staffs.

Certificate of Need Law. The House adopted the resolution supporting voluntary planning that preserves decision-making at the local level. Physicians in the active practice of medicine should be included in decision-making at the local level.

The need to increase the opportunities for medical students to obtain exposure to family medicine was approved.

Physicians and the Public

Texas introduced a resolution highlighting to the public the importance of a universal emergency telephone number for obtaining emergency care and directed the AMA to support and collaborate in the current efforts to set up #911 as the nationwide emergency telephone number. The resolution passed.

The House adopted another Board report which encourages state medical societies to support amendments to the medical licensure laws to permit out-of-state physicians to practice temporarily in areas of medical need.

Another Illinois resolution urging that funding for improved migrant health care be obtained from a national source was referred to the Council on Medical Service to report back with feasibility data at a later meeting.

Association and Internal Matters of the House

The House approved a Board report which opposes unionism among self-employed physicians.

The proposed formation of a Medical Liability Commission to represent health care providers in dealing with medical malpractice problems was approved. Representatives on the Commission will be from the AMA, AHA, American College of Surgeons, American College of Physicians, and four other specialty societies.

A seat on the Council on Medical Service and the Council on Medical Education was provided for a representative from the resident-intern members of the AMA.

The question of separating the Business and the Scientific Meeting of the AMA was discussed. It was decided that a meeting of the Scientific Assembly be held each year in conjunction with the Annual Convention, but that one or more meetings of the Scientific Assembly be held each year at times and places selected by the Board of Trustees. These meetings may or may not conjoin with the Clinical Meeting of the House.

The proposal that the Board of Trustees be elected on a geographic or regional basis was rejected.

Regarding membership certification and dues, it was decided that (1) physicians shall become members of the AMA upon certification by state medical societies rather than by AMA receipt of dues; (2) the delinquency date for remittance of AMA dues is changed from June 1 to April 30 of each year, and the requirement that members who have been dropped for non-payment of dues must pay one year's past dues is eliminated.

Miscellaneous

The House adopted a substitute resolution recommending that the AMA urge the enforcement of strict penalties for the use of firearms in the commission of a crime.

The traditional favorable attitude of the medical profession toward pregnancy and motherhood was reaffirmed.

The House also reaffirmed the AMA abortion policy which states, "Abortion is a medical procedure and should be performed only by a duly licensed physician and surgeon in accredited hospitals acting only after consultation with two other physicians, and in conformance with standards of good medical practice and the Medical Practice Act of his state. Neither physicians, hospital, nor hospital personnel shall be required to perform any act violative of good medical judgement or personally held moral principles."

A resolution that states with only one delegate to the House be permitted to have their alternate delegate seated with their delegate was defeated.

This meeting and these deliberations were long and oftentimes tedious. Both of your delegates wish to express our heartfelt thanks to those members of our Society headquarters staff who spent many long hours with us covering the various committee meetings; to the physician members of our society who also helped, we say thank you.

William O. LaMotte, Jr., M.D.
Henri F. Wendel, M.D.

DELAWARE ACADEMY OF MEDICINE

The year 1972 to 1973 at the Academy of Medicine has proceeded much as in the past. There has been a continuing exploration as to the future role and direction for the Academy, which was studied by a special committee appointed by the President of the Academy. The recommendations of this special committee were as follows:

1. The Academy should seek more involvement of the lay public in the activities of the Academy.
2. The Academy should continue to acquire property as available in the Lovering Avenue area immediately surrounding the block on which the Academy is located.
3. The Academy should continue to explore relocation in conjunction with the Wilmington Medical Center's development of its I-95 site.

In conjunction with each of these recommendations the following activities can be reported. A brochure is being prepared describing the activities of the Academy, and this will be distributed widely among physicians and lay groups in the community in an effort to stimulate greater interest in the Academy and increase its membership. Another property has been acquired in the block of houses immediately adjacent to the Academy. Contact has been established with the Wilmington Medical Center and its Planning Department in an effort to study possible developments at the I-95 site, which might include the location of the Academy of Medicine there at some date in the future.

Other activities of the Academy during the year included an increase in library activities, particularly cooperative ones with the Wilmington Medical Center library, the library of the Alfred I. duPont Institute, and the University of Delaware. There has been discussion of the implementation of a Medline terminal to augment the capabilities of the library. However, this program has been delayed because of the high cost of the operation and the inability to finance it at this time. Increasing costs are one of the problems facing the Academy, and a search for new revenues is being continued.

The student loan program which has been in operation for more than ten years has dispersed $230,450 to 115 students. Of this amount, $183,573 is outstanding and $50,000 has been repaid. Twenty-nine students have repaid their loans in full. There is an available cash balance in 1972 of $38,216. Sixty-four students in Medicine were assisted, 32 in Dentistry, 11 in Oral Hygiene, one Physician's Assistant, one in advanced Nursing, five in Physical

Therapy, and one in Optometry. It was noted that the collection rate of money on loan has been improving after a period during which this was conducted in a rather desultory manner.

During the year about 600 meetings of various kinds were held at the Academy. The Academy co-sponsored a three-day Infectious Disease Symposium under the auspices of the Infectious Disease Laboratory at the Wilmington Medical Center. This was a great success, which achieved by virtue of its program and participants national recognition. The program of Infectious Disease Symposia is now in its ninth year. The Academy co-sponsored a Philadelphia Regional Chronic Pulmonary Pediatric Disease Program in October 1972. The Robert O. Y. Warren Memorial Lecture was held, as was the David Flett duPont Memorial Lecture. The Annual Meeting in February 1973 was a great success. It was preceded by dinner at which time Mrs. Sarah Beatty, widow of Dr. Gerald Beatty, was honored in absentia as a long-term supporter of the Academy. Unfortunately Mrs. Beatty had been taken ill quite suddenly, and the award was accepted by her two daughters. The lecture that evening was presented by Mr. Jens Bjerre, a Danish journalist who has been in China on several occasions and showed movies which he narrated and then answered questions. The title of his talk was "China, the Awakened Giant," and it was well attended.

The membership of the Academy at this time consists of 409 active physician members, 87 associate or lay members, and 37 affiliate members. The President of the Academy is Dr. Davis G. Durham, and he will be succeeded at the end of the second year of his term by Dr. Alfred Bacon, who is now first vice-president.

As I have said before and will repeat again, I have greatly appreciated the opportunity of serving as your liaison representative to the Academy of Medicine and would be pleased to continue in that capacity.

Norman L. Cannon, M.D., ***Representative***

REPORTS OF SPECIAL COMMITTEES

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF DELAWARE

Summary of year's activities from October 1972 to October 1973

Community Health Education

Members assisted with program on NUTRITION sponsored by Delaware Academy of Family Physicians . . . Film "Journey into Nutrition" was obtained and shown to five elementary schools where it was well received. A State Nutritionist was a featured speaker at a Future Nurses Tea for area school Future Nurse Club members and their advisors. Our members assisted with VD radio program sponsored by the Medical Society of Delaware. It is evident that more concentration on helping with health education in schools should be one of our goals.

Community Service

Auxiliary volunteers with the help of four other organizations continued to staff the child care service for Family Court of Delaware established a year ago.

Amblyopia Eye Testing Committee screened 1,268 children in thirty-five nursery, kindergarten, and Head Start schools, which resulted in twenty-five referrals. An additional nine Head Start schools are scheduled for screening this year.

Senior Centers were aided in programs; manpower and merchandise provided at affairs for patients at Delaware State Hospital; volunteers teaching arts and crafts weekly at other hospitals; still others involved in "Candy Stripers" orientation programs for hospital duty, as well as Future Nurses Clubs and help in starting a Recycling Center.

Health Manpower

Thirty-six applicants were screened by members for nursing grants. This resulted in 18 grants-in-aid being awarded as follows: 10 from Auxiliary ($3300); 7 from Rotary Club of Wilmington ($2500); 1 from Milford Lions Club ($500). One Auxiliary award, the Sylvester W. Rennie Scholarship, was given to a second-year nursing student at Wesley College. 40 copies of FIND (Financial Information National Directory for Health Careers) published by AMA, were purchased and given to every public high school in Delaware. A booklet, "Why Be A Dreamer?" (presents 30 allied Health Careers, introducing the high school student of today to the opportunities and challenges waiting in medicine and its related fields), was also distributed to schools in one county.

A fashion show, dinner dance, recipe auction, and geranium sale were fund-raising events for Auxiliary Scholarships.

Members continue to recruit and support students for "Candy Stripers" programs and Future Nurses Clubs.

Fund Raising for Medical Education

Woman's Auxiliary to the AMA 50th Anniversary letter of appeal, other contributions, miscellaneous sales, luncheon fashion show, flea market, etc. through the combined efforts of our three counties resulted in a grand total of $4,513.92 collected for AMA-ERF. This total included $2,166.91 for DIMER, accepted as a recipient for funds by AMA-ERF in 1972. $2,070.37 was also contributed to Delaware Academy of Medicine Student Loan Fund by way of appeal letter.

International Health

Seven barrels of Medication samples, a large carton of leprosy bandages and johnny coats, plus three sterilizers were collected and shipped to Catholic Missions in Africa . . . medications locally sent to Delaware State Hospital and Kidney Foundation. Sixteen large cartons of braces, artificial limbs, and corrective shoes from A. I. duPont Institute packed and sent to Vietnam by way of Catholic Charities.

Legislation

Members were active in contacting legislators when asked by Medical Society and also participated as volunteers for candidates of their choice in 1972 elections. DELPAC meetings were attended by members.

Awards

An *Award of Merit* to Delaware, presented by AMA-ERF for outstanding aid it gave in assuring for America's future doctors the finest medical training in the world.

A *Certificate of Achievement* in recognition of increase in membership presented to Woman's Auxiliary by the AMA.

These honors were bestowed and accepted at the National Convention, New York, in June.

Meetings

All required meetings were held with interesting programs presented on county and state levels relative to health and medicine. . . . Various topics included mental health, international health, medical legislation, genetics, a talk and demonstration of Yoga, and a tour-luncheon-seminar to the Hospital for the Mentally Retarded at Stockley.

Annual State Meeting held May 2nd was the grand finale to a most productive year under the leadership of a dedicated President, Mrs. Edward T. O'Donnell. Officers and Committee Chairmen attended Regional Work Shops, National Conferences, Neighboring States' Meetings, etc.

President attended regular Medical Society Board of Trustee meetings and together with Delaware's Delegate and Alternate Delegate, the National Convention of the Woman's Auxiliary to the AMA.

Members have assisted the Medical Society Staff periodically in many clerical procedures when called upon. They have also planned a mini arts and crafts show to coincide with the Annual Meeting of the Medical Society for the pleasure of visiting physicians, wives, and friends.

State Newsletter

The *Diamond State Distaff* was published for the second time, mainly through financial aid graciously given by ICI America, Inc. and also through the untiring efforts and encouragement given in many ways by the Staff of the Medical Society, for which we are most appreciative.

The Auxiliary is sincerely grateful to the Medical Society of Delaware for their willingness to advise, encourage, and continue to support us financially and otherwise.

Thank you!

Mrs. F. B. Lane Haines
***President*, 1973-1974**

COMMUNITY COUNCIL ON EMERGENCY SERVICES

The Community Council on Emergency Services has been fairly active during the past year, having from ten to fifteen regularly attending members.

A variety of subjects have been discussed during this period. A solution has been found for some, and others are still under active discussion. It is a progressive committee.

Positive action has been taken on the following subjects:

(1) A course at the University of Delaware on emergency care to the injured.
(2) Completion of the 10-Code for use in New Castle County.
(3) First-aid training for ambulance drivers.
(4) Transportation equipment and continuing resolution of problems of the State helicopter.
(5) Cardio - pulmonary - resuscitation refresher courses held by New Castle County.
(6) Review of sample ambulance forms with the goal of a universal form.
(7) Guidelines for transport and transfer of certain patients by ambulance.
(8) Categorization of emergency facilities.

L. Mario Garcia, M.D.
Alfonso P. Ciarlo, M.D.
Albert Dworkin, M.D.
Representatives

CONTINUING EDUCATION AND CERTIFICATION COMMITTEE

Your Committee on Continuing Education and Certification has been extremely active this past year, as has been the case for these several years. The affiliate program between the Delaware Institute for Medical Education and Research, the Jefferson Medical College, the University of Delaware, and the Medical Society of Delaware continues to enjoy a high level of participation by members of the Society in its program. The critiques received this year concerning the program have been as complimentary as before, and I can say categorically that we have received no adverse comment since this expanded program began.

Another milestone for the Society that was begun this year is a *voluntary* certification program for our membership to show active and meaningful participation in continuing education to the public and the legislators. By this report I hope to encourage each of you, as well as the entire membership, to personally participate in order to show that on a voluntary basis we are maintaining a high educational level and thereby have no need to be dictated to.

This will be my last report as Chairman of the Continuing Education and Certification Committee, and I have appreciated the opportunity to serve the Medical Society of Delaware in this capacity.

William H. Duncan, M.D., ***Chairman***

C. Allen, M.D.	**G. B. Heckler, M.D.**
D. A. Alvarez, M.D.	**K. A. Kim, M.D.**
G. K. Berger, M.D.	**M. Oz, M.D.**
L. O. de Bernard, M.D.	**B. Z. Paulshock, M.D.**
N. A. de Leeuw, M.D.	**J. C. Straughn, M.D.**
J. Gelb, M.D.	**W. V. Whitehorn, M.D.**
K. Gurdikian, M.D.	**L. W. Whitney, M.D.**

THE DELAWARE FOUNDATION FOR MEDICAL CARE

The Delaware Foundation for Medical Care has continued to plan for a Pilot Project for Medical Care. A specific limited proposal in conjunction with Blue Cross-Blue Shield of Delaware, Inc. was approved by the Board of Trustees of the Medical Society of Delaware in July 1973 and will be in operation January 1, 1974 for a trial period of one year. A summary of the proposals of that plan is attached.

A letter will be sent to each practicing physician in Delaware asking him to join the Foundation for this project. It will emphasize to the physician that he will at no time be at financial risk under this plan, that there will be no dues involved and that membership will give him a voting voice relative to all operations of the Foundation.

Public Law 92-603 now requires the establishment by January 1, 1974 of Professional Standards Review Organizations. The Board of Trustees of the Medical Society of Delaware has recommended to the Secretary of the Department of Health, Education and Welfare that the Delaware Foundation for Medical Care be appointed as the P.S.R.O. agent for Delaware. This was a logical recommendation, for the Foundation's planned Pilot Project includes many requirements of P.S.R.O. such as determination of medical need, monitoring of quality of care, and proper utilization of in-patient facilities.

In May 1973 the Foundation established a P.S.R.O. Advisory Committee to make recommendations to it on P.S.R.O. problems. This committee includes representatives of all the Delaware Hospitals and of the Association of Delaware Hospitals, the Peer Review Committees of the Medical Society of Delaware and of the Delaware State Osteopathic Medical Society, the Blue Cross-Blue Shield of Delaware, Inc., the Health Planning Council, Inc., the State Comprehensive Health Planning Council, the Delaware Association of Nursing Homes, the State Divisions of Public Health and of Mental Health, the Delaware Nurses' Association, the Podiatry Association of Delaware, the Delaware State Dental Society, the Delaware Pharmaceutical Society, and the Delaware Chapter of National Health Agencies.

A letter is being sent now to each Delaware physician inviting him to join the Delaware Foundation for Medical Care for its P.S.R.O. function. Thus each physician will be free to join the Foundation for either the P.S.R.O. or Pilot Project function or for both, as he sees fit.

The Delaware Foundation for Medical Care will continue to plan toward preserving the right of private physicians to work in their private offices providing quality medical care on a fee-for-service basis. It will serve as a coordinating mechanism to allow them on this basis to work together to furnish care to groups under local physician direction and control, and will give them a united voice in discussions with government and third parties.

David Platt, M.D.
President, Board of Directors

D. A. Alvarez, M.D.	**Jack Gelb, M.D.**
M. V. Andersen, M.D.	**J. J. Giliberto, D.O.**
J. L. Campbell, M.D.	**E. F. Gliwa, M.D.**
V. T. Davis, M.D.	**Nizar Kuseybi, M.D.**
E. S. Dennis, M.D.	**W. A. E. Leitzinger, M.D.**
C. A. Depfer, D.O.	**A. J. Morris, M.D.**
W. H. Duncan, M.D.	**H. S. Rafal, M.D.**
R. B. Flinn, M.D.	**H. H. Stroud, M.D.**

Proposal of the Delaware Foundation for Medical Care

1. The Delaware Foundation for Medical Care will develop a comprehensive peer review program (including Certified Hospital Admission Program) to include medical inpatient and outpatient and extended care services. The scope of the program will include review of the quality of care and over and under utilization.

2. The insurance carrier will identify those subscriber groups who currently have "first dollar" coverage for home and office visits and will secure group approval for inclusion of some in the Foundation-sponsored program.

3. The Foundation will review and approve all contracts between the insurance carrier and the enrolled groups for those groups who are being considered for the Foundation-sponsored program, to certify proper levels of covered medical services.

4. The insurance carrier will fund the review program to the extent of the proportion of the insurance carrier subscribers in the Foundation-sponsored program.

5. The Foundation shall have access to the insurance carrier's statistical data relative to the program and will determine criteria for selecting claims to be reviewed.

6. The insurance carrier will provide such coverage for services rendered by qualified non-physician personnel as will be agreed upon mutually by the insurance carrier and the Foundation.

7. Subscribers enrolled in the program will have freedom of choice of any physician whether or not he is a Foundation member. Payment for covered services will be made directly to participating physicians (i.e., as to physicians participating in the insurance carrier Prevailing Fee Programs). There

will be no differential in the amount of payment for services rendered by non-participating physicians.

8. The subscribers' insurance carrier premiums will comprise payment for all covered services to the full extent of the subscribers' contract. Physicians will be reimbursed by the insurance carrier on a prevailing fee, fee-for-service basis and will not be at financial risk.

9. The Delaware Foundation for Medical Care will be free to make similar arrangements with other insurance carriers.

10. Actions of the Delaware Foundation for Medical Care will continue to be subject to approval by the Board of Trustees of the Medical Society of Delaware through the Medical Services Insurance Committee or whatever other mechanism is in the future designated by the Medical Society of Delaware.

Delaware Foundation for Medical Care Pilot Project Brief

Purpose: To implement an organized, totally coordinated professional medical care review program, utilizing the respective resources of the Delaware Foundation for Medical Care, Inc. and Blue Cross and Blue Shield of Delaware, Inc.

Objective: To analyze and control, as necessary, the quality and quantity of medical care delivered to an identified patient population; eliminating unnecessary care; and, developing a functional relationship between the Plan and the Foundation consistent with the PSRO (Professional Standards Review Organization) legislation.

Scope: 1. The pilot project will include as participants: 10,000 individuals customarily receiving medical care in Delaware, with claims for such care administered by the Plan. This group of individuals will consist of 5,000 Blue Cross and Blue Shield members with Comprehensive coverage and 5,000 Medicaid clients.

2. The project will run for 18 months, including a six-month planning and development period, with the implementation phase scheduled to be effective January 1, 1974.

Procedure: The Delaware Foundation for Medical Care, Inc. and Blue Cross and Blue Shield of Delaware, Inc., within the specified time frame, shall jointly develop a program that will establish:

1. Professionally acceptable norms of medical care will be derived from several sources, but will be limited to the practice of medicine in Delaware and, if warranted, relative to each of the three counties (Kent, Sussex, New Castle). The following are some potential resource centers from which professional norms can be established:

   a. third party claims history files;
   b. clinical history files;
   c. hospital data systems;
   d. peer review evaluations;
   e. adaptations of national study groups; and,
   f. so on.

2. Pre-admission appraisal of non-emergent hospital admissions (Certified Hospital Admission Program — CHAP) will be implemented using nurses and physicians who are members of the Delaware Foundation for Medical Care, Inc. The process will call for a certification of need for inpatient care prior to the time of admission.

3. Professional review of patterns of medical care, including questionable medical care situations will most likely be handled through the existing peer review structure and focus on determining the appropriateness of both the quality and quantity of the care provided to Foundation members. Under this circumstance, the patterns of care will be evaluated after the fact, or more precisely, after the care has been provided.

4. Evaluation of provider utilization committee activity and performance will be conducted by the Foundation and designed to determine the extent of utilization committee activity and performance in terms of level of care evaluations, length of stay and clinical indications for admission.

5. A system to resolve problems associated with the determination of medical necessity of care will be established and function as an appeal mechanism for:

   a. attending physicians,
   b. foundation patients,
   c. utilization committees,
   d. third party,
   e. etc.

6. Evaluation of the performance of professional or peer review committees, at a county, medical specialty or other level, will be conducted by the Foundation to determine their effectiveness and in order to offer constructive recommendations for improvement.

7. A periodic evaluation of the project and its component functions will be conducted to determine that responsibilities are being met and that reviews are being conducted on a timely basis.

Foundation Responsibilities

The Foundation will:

1. Provide a model for P.S.R.O. operation.
2. Develop statewide norms of care that will be designed to attempt to improve the quality of delivered care.
3. Develop educational programs for the medical community utilizing Foundation experience, Plan data and other relative findings, to enhance the progress of medical care.
4. Develop educational programs for individual providers to attempt to improve quality of care and eliminate inappropriate care.
5. The responsibilities of the Foundation shall be extended beyond specific Plan benefits to include all health care received by the Foundation membership.

6. The Foundation will attempt to discover any deficit in provision of medical care and to suggest appropriate remedies.

DELAWARE POLITICAL ACTION COMMITTEE

There have been no meetings of DELPAC this year. The treasury shows a balance as follows:

Checking accounts	$803.23
Cash on hand	60.00
TOTAL	$863.28

Joseph A. Glick, M.D., ***Chairman***

DRUG ABUSE TASK FORCE

At a meeting of the Committee it was agreed that the problem of drug abuse is a problem of the medical community as well as the community at large and that physicians have an obligation to inform themselves of the most up-to-date drug information available and to share this information with interested groups.

The Task Force recommends to the Board of Trustees that a special one-day seminar be held to update physicians' knowledge in this area and recommends to the House of Delegates that physicians recognize their responsibility to educate those who influence children, namely, parents and teachers.

Ali Z. Hameli, M.D., ***Chairman***

T. M. Alatur, M.D.
R. T. Beattie, M.D.
L. O. de Bernard, M.D.
J. E. DeLaurentis, M.D.
A. Dworkin, M.D.
J. A. Glick, M.D.
K. K. Kimura, M.D.
V. G. J. Lobo, Jr., D.O.
L. C. Mankin, M.D.
I. V. Monteleone, M.D
W. Omans, M.D
W. J. Vandervort, M.D

ENVIRONMENTAL AND PUBLIC HEALTH TASK FORCE

The Environmental and Public Health Task Force met on a monthly basis throughout the year. We reviewed problems of public health and environmental quality. During the year we had guest consultants such as Nurtan Esman, Ph.D., Assistant Professor, Department of Civil Engineering, University of Delaware; Jacob Kreshtool, Esq., Delaware Citizens for Clean Air; Harry Camper, Executive Director, Delaware Comprehensive Health Planning Council; J. Lynn Hopkins, Air Resources Section of the Division of Environmental Control; and Bruce C. Lutz, Ph.D., Chairman of the Authority on Radiation Protection.

Minutes of the meetings were directed to the Trustees. The Regional Meeting of the AMA was attended by Drs. Wooden, Wendel, Gliwa and O'Brien.

The Committee reviewed several environmental bills in the General Assembly and recommended their approval: S.S. 1 for S.B. 219; H.B. 269; and H.B. 270.

The Committee recommended disapproval of S.J.R. 16, which would have transferred authority over shellfish harvesting from the Department of Health and Social Services to the Department of Natural Resources and Environmental Control.

Information on the possibility of a nuclear power plant accident was forwarded to all members of the state Legislature.

The Committee's work is unending, and we wish to solicit help from all the members of the Society.

Frank T. O'Brien, M.D., ***Chairman***

E. D. Bryan, M.D.
J. E. DeLaurentis, M.D.
E. F. Gliwa, M.D.
J. M. Hofford, M.D.
L. P. Lang, M.D.
C. Vileisis, M.D.
P. R. Walker, M.D.
H. F. Wendel, M.D.
A. C. Wooden, M.D.

GRIEVANCE COMMITTEE

Only one complaint came before the Committee this year, and it has been settled.

Rhoslyn J. Bishoff, M.D., ***Chairman***

H. M. Baganz, M.D.
C. M. Moyer, M.D.
H. H. Stroud, M.D.

THE HEALTH CARE DELIVERY COMMITTEE

The following suggestions have been compiled after discussions with

Henry H. Stroud, M.D., Past Chairman, Health Care Delivery Committee;
William D. Johnson, M.D., Chairman, Task Force I — Population Growth Control;
G. Barrett Heckler, M.D., Past Chairman, Task Force III — Education, Supply and Distribution of Physicians in Delaware;
Jack Gelb, M.D., Chairman, Task Force IV — Comprehensive Health Care Centers;
William D. Shellenberger, M.D., Chairman, Task Force V — Aging;
Edward F. Gliwa, M.D., Chairman, Task Force VI — Ambulatory Health Care Facilities Development;
William H. Duncan, M.D., Chairman, Task Force VII — Extension of Hospital Facilities and Services in the Neighborhood.

It is my impression, and the impression of many of the chairmen of these task forces, that a revision of the Health Care Delivery Committee and its various task forces may be considered.

Their tasks were to assess the various needs of the Health Care Delivery System in Delaware, to make recommendations, and to function as a clearing house for the collection of information that will be shared with other groups active in the area of health planning with the ultimate objective of improving the health care delivery system of Delaware.

These recommendations were presented to the House of Delegates at their October 20, 1972 meeting.

A majority of the task forces were concerned with areas of medical practice and health care needs that are being directed or monitored by other agencies, governmental and private.

Since many of these agencies have full-time help, the problem of the physician in private practice providing more than advisory help becomes self-evident. It therefore seems evident to us that these task forces have no further reason to function as such. But their roles can be played by existing committees or individual physicians in roles of liaison to the Board of Trustees of the Medical Society of Delaware.

Some of the task forces are concerned in health care areas where only physicians have the ultimate responsibility such as Task Force III. Certain other task forces should continue to play an important role in the planning of medical care, such as Task Force IV, so that organized medicine will continue to have a significant voice in the manner that medicine is practiced.

Therefore, certain task forces need to continue to function, not just to make recommendations and to advise, but to implement these recommendations.

TASK FORCE I — POPULATION GROWTH CONTROL, *William D. Johnson, M.D.,* Chairman. Dr. Johnson suggests that this committee and its functions can be incorporated into the present standing committee on Maternal and Child Care. He suggests that the demographic report in regard to state population, the number of newborns, the number of deaths, and the number of abortions can be made a yearly report. This information has significance, for it will provide basic data, which may suggest changes in the medical needs of the state.

TASK FORCE II—CAREER DEVELOPMENT & TRAINING ALLIED HEALTH PERSONNEL. This has not been an active committee this year, and its function could be under the supervision of Task Force III.

TASK FORCE III—EDUCATION, SUPPLY AND DISTRIBUTION OF PHYSICIANS IN DELAWARE, *G. Barrett Heckler, M.D.,* Chairman. Dr. Heckler does not wish to continue as chairman of this committee. His impression of the needs by 1980 have already been presented to the House of Delegates. In summary, he thinks it is unrealistic to simply estimate the number of physicians that might be needed by 1980, but has given his impressions based on other surveys. His major areas of concern have been the distribution of physicians in Delaware, the decreased number of primary physicians, and the positions of paramedical personnel and multiphasic screening in the practice of medicine. He seemed to be concerned that an over-supply of physicians might be present in the future, and that rather than supplying better medical care to the citizens of Delaware, it will be just supplying more doctoring.

I suggest that this task force continue to function and that its main goals will be: (1) To allow the various bodies who are concerned with training, licensure, and ultimate distribution of physicians to work together. (2). To actually help find the areas in most need of physicians to see to it that the physicians available are made cognizant of these practice opportunities. (3). To accumulate and correlate demographic data of our physician population, which will be needed to guide our health care delivery system.

TASK FORCE IV—COMPREHENSIVE HEALTH CARE CENTERS, *Jack Gelb, M.D.,* Chairman. Dr. Gelb has previously made his recommendations that the Medical Society of Delaware should not have as its primary responsibility the delivery of health care, but to help in the planning of the various methods of delivery of health care. This planning and organization would properly come under the umbrella of the corporation, which is already established.

TASK FORCE V—AGING, *William D. Shellenberger, M.D.,* Chairman. It is recommended that this committee be continued. Dr. Shellenberger has outlined in his report the various needs of the aged, but his difficulty is in implementation of these recommendations. He states that the greatest need is money.

Certainly organized medicine cannot implement these recommendations, but can only act as consultants.

Perhaps the first step in implementation would be to approach the lay organizations already organized to help the elderly, so that money and the manpower necessary to accomplish the goals previously outlined, can be obtained.

TASK FORCE VI—AMBULATORY HEALTH CARE FACILITIES, *Edward F. Gliwa, M.D.,* Chairman. Dr. Gliwa does not think that this committee needs to be continued as such. He states that we have had input into this area through our members on the Comprehensive Health Planning Council of the state and Health Planning Council of New Castle County.

TASK FORCE VII—EXTENSION OF HOSPITAL FACILITIES AND SERVICE IN THE NEIGHBORHOOD. *William H. Duncan, M.D.,* Chairman. Dr. Duncan thinks that there is no need for a "meeting committee." Dr. Duncan suggests that he be the liaison with the hospital association to report back to the board what the hospitals are doing.

Since many of these task forces, therefore, will not continue to function, the Health Care Delivery Committee as such is no longer needed. We recommend that the Health Care Delivery Committee as a whole be dissolved and that the only committees that should continue to function would be Task Force III and Task Force V.

David A. Levitsky, M.D., ***Chairman***

LIABILITY INSURANCE TASK FORCE

A review of the Society's professional liability insurance program reveals the following information.

Approximately half of the 650 physicians who are eligible to participate in the program have elected to participate.

It was reported that since the inception of the program (1) rates have remained stable; (2) a dividend of 4.6% applicable to the primary professional liability rate has been declared; (3) the partnership and corporation surcharge has been reduced by 50%; (4) cancellation and declination activity has been minimal; (5) Aetna will continue to maintain an open mind relative to providing coverage for new procedures and situations as they arise. For example, acupuncture has been discussed and Aetna will cover members engaging in this practice.

As of December 1, 1973 and through December 1, 1974 the following plans will become operational:

1. An additional option relative to the Catastrophe Coverage will be made available. A physician may choose $250,000 of Excess Major Medical Coverage in place of the present $25,000. The additional cost is approximately $13.
2. A study of the entire program is being undertaken to determine whether there are any inequities in the present program and whether Aetna is as responsive as it can be to the changes which have taken place in the practice of medicine.
3. Physicians will have a one-page document to attach to their 1973 policy, rather than receiving the current bulky policy. It can mean an expense savings to Aetna which can be considered in the calculation of possible future dividends.
4. (a) Primary professional liability rates will increase by 38%. The formula procedures, using Policy Years 1967 through 1971, indicate a 59% deficiency in the current rates. Aetna must increase the Primary Professional Liability the full amount allowed under the Price Commission Phase IV Guidelines, or 38%.
   (b) The Catastrophe professional liability factor will be reduced by approximately 30% for Class 3, 4 and 5 Surgeons.

To date, there have been eleven regular claims registered for review under the program. One eventually went into suit and was subsequently dismissed; two others have been closed, and at the present time there are six outstanding claims under the program.

The main thrust of the program continues to be Loss Control and Education.

The experience for the first account year six months after its close indicates a dividend of $11,897 (or 4.6%) for the Medical Society of Delaware is in order. The dividend represents a savings in the administration of the program.

A motion was made and carried that the Medical Society of Delaware support the 38% rate increase to be submitted to the Insurance Commissioner by the Aetna Life and Casualty Company.

James B. McClements, M.D., ***Chairman***
O. S. Allen, II, M.D. **D. A. Nelson, M.D.**
M. Gibbs, M.D. **R. W. Powell, M.D.**
J. C. Lewis, M.D. **D. E. Saunders, M.D.**
S. S. Morovati, M.D. **I. J. Tikellis, M.D.**
A. F. Zimmerman, M.D.

MATERNAL AND CHILD CARE COMMITTEE*

Maternal Mortality

Between July 1, 1972 and June 30, 1973, there were no maternal mortalities in the state of Delaware. The reporting system throughout the state seems to be functioning well and not only maternal but neonatal data are being compiled by the State Health Department. Computerization procedures are being developed. Standardization of neonatal mortality statistics will be in accord with the international classification recommended by the AMA board of trustees two years ago.

Illegitimacy in Delaware

These were 1,483 illegitimate births in Delaware in 1971. There were 1,617 illegitimate births in Delaware in 1970. (See attached table.)

Abortion Statistics for the Past Two Years

Total abortions in Delaware in 1972 were 1,372 versus 1,129 in 1971. (See attached table.)

Lead Poisoning

Testing throughout New Castle County has now been initiated. The program has been extended to lower New Castle County. It is hoped that the program can be extended into the two lower counties in the near future.

Family Planning Services

Family planning counseling and services are now available throughout the state of Delaware. Planned Parenthood in Wilmington has approximately fifteen to twenty clinics including Middletown, SMAC and Northeast Clinic.

State Health Department in cooperation with Planned Parenthood has clinics in Sussex County at the following locations: Georgetown, Bridgeville, Laurel, Cecil, Frankford and Lewes. In Kent County there are clinics at Dover, Milford, Delaware State College and Wesley College.

Comprehensive Health Care for Children

Medicaid coverage (Title XIX) has been extended to age twenty-one. What used to be called "Well Baby Clinics" are now called "Child Health Conferences." For the most part, these clinics use paraprofessional personnel and make referral to the appropriate health care facilities.

Delaware Adolescent Program, Inc.

This program is still operating, but in jeopardy. The educational component in Wilmington is adequately funded for the year by the Wilmington Public Schools. However, the appropriation from the state of Delaware was eliminated from the budget for the current year. The program remains active with contingency funding. However, if Federal funds are not forthcoming in the near future, the program may be terminated.

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*The tables accompanying this report are on file in the Society office and are available to members on request.

William D. Johnson, M.D., *Chairman*

M. V. Andersen, Jr., M.D.
J. L. Campbell, M.D.
T. E. Chronister, M.D.
T. E. Dyer, M.D.
R. E. Erb, M.D.
K. L. Esterly, M.D.
P. C. Francisco, M.D.
J. B. Geissinger, M.D.
R. C. Hayden, M.D.
C. B. Hearne, M.D.
N. Kuseybi, M.D.
W. A. E. Leitzinger, M.D.
C. B. Middleton, M.D.
C. L. Minor, M.D.
H. Rosenblum, M.D.
C. Vileisis, M.D.
O. S. Weaver, M.D.

MEDICAL ECONOMICS TASK FORCE

The Medical Economics Task Force dealt with two primary areas of interest in the past year. These two areas were in the Life Insurance Program and in the Disability Income Insurance Program. The third area of concern was in the previously proposed merger of the Medical Economics Committees of the Medical Society of Delaware and the New Castle County Medical Society.

First, I am happy to report that your committee has obtained an excellent indemnity program in the amount of $500 per week from the Continental Insurance Company, through the combined underwriting services of J. A. Montgomery and Bertholon-Rowland Companies. This program will be made available to the Society, as soon as merchandising programs can be worked up by the above stated underwriters. This committee believes this to be an excellent program, providing an excellent amount of protection.

Secondly, our committee has reviewed the life insurance programs available to the Society. The only insurance program currently available is the one sponsored by the Delaware Academy of Medicine. We have contacted the underwriters of this particular program, and they have agreed to extend this same coverage, in the amount of $30,000 per year to all members of the Kent and Sussex County Medical Societies on application. This information is being disseminated by Dr. Syrovatka. In addition, they have agreed to allow all other members of the New Castle County Medical Society who have not taken advantage of this program, to apply, and they will be eligible for enrollment in this program at the same time.

Our committee also looked into the feasibility of obtaining an additional life insurance program. We received quotations and proposals from two firms in the area, and then compared them with the $50,000 policy offered by the American Medical Association. Neither of the two proposals that were received came anywhere close to the American Medical Association program in cost.

Our committee therefore recommends that no additional life insurance programs be looked for. Any member wishing to obtain additional coverage had best be advised to enroll in the American Medical Association program for the best coverage at the least cost.

The third item of consideration was that of merger of the two Medical Economics Committees. It is the hope of the present committee that the House of Delegates reconsider the recommendation for merger made by my predecessor, Dr. Olin Allen.

Howard Wilk, M.D., *Chairman*

O. S. Allen, II, M.D.
R. T. Beattie, M.D.
R. C. Corbalis, M.D.
C. L. Edward, M.D.
J. R. Fox, M.D.
W. R. Johnson, M.D.
J. M. Levinson, M.D.
D. W. MacKelcan, M.D.
R. L. Meckelnburg, M.D.
R. W. Powell, M.D.
H. S. Rafal, M.D.
D. Schetman, M.D.
I. J. Tikellis, M.D.

MEDICAL LOANS TASK FORCE

Our Medical Loans Task Force was represented by Gordon Keppel, M.D. at the Academy of Medicine Student Financial Aid meeting on June 20 and July 10, 1973. At the earlier meeting, the following guide line was passed for future reference, "In view of the possibility of cuts in the State appropriation and should this occur, the allocations to the students in the Delaware-Jefferson program shall be according to financial need of the student, but each student should receive at least $1,250." On July 10, 1973, the following loans were approved:

Douglas B. Horner — State University of New York, Buffalo, will receive $1,000.

Gary M. Owens — Jefferson Medical College, will receive $2,000 from DIMER and $750 from the Society.

Robert F. Olivere—Jefferson Medical College, 1st year, will receive $2,000 from DIMER and $750 from the Society.

Gordon Keppel, M.D., *Chairman*

Richard B. Crabb, M.D.
Edward S. Dennis, M.D.
Warren R. Johnson, M.D.

MEDICINE AND RELIGION COMMITTEE

This year's report reflects continued growth and involvement of the committee as it represents before the State on behalf of the Medical Society of Delaware the close-working relationship between medicine and religion. There has been a strengthening of present programs and ties with the Department of Pastoral Care of the Wilmington Medical Center.

An up-to-date survey of activities follows:

1. Our committee was represented at the annual meeting of the National Committee of Medicine and Religion, held in New York City on Satur-

day, February 24, 1973. At that meeting a report was given of the activities sponsored by our State's Medicine and Religion Committee the previous year. Following the New York meeting, a member of our committee was invited to visit the District of Columbia Medical Society's meeting to speak about our State's program concerning medicine and religion.

2. A series of lectures on the subject of "anxiety" were co-sponsored by the Medicine and Religion Committee of the Medical Society of Delaware and the Department of Pastoral Care of the Wilmington Medical Center. Recognizing the fact that anxiety is the most common experience of man, and all who seek to help those who suffer physical or emotional injury and disease must learn to recognize it and its many manifestations, the committee sought to structure a series of seminars on this subject in an attempt to bring together those persons most directly involved in the care of patients suffering from anxiety. Physicians who took part in the series included Charles M. Bancroft, M.D., Russell J. Labowitz, M.D., Dewey A. Nelson, M.D., V. Terrell Davis, M.D., Jane C. Straughn, M.D., as well as Marion Howell, R.N., and Chaplain Swanson. The series was held every other Thursday morning, beginning November 30, 1972 through May 17, 1973, in the Auditorium of the Nursing Residence at the Memorial Division. There was an excellent attendance with many physicians participating regularly. Another series is planned for the coming year on the subject of "The Aging of the Individual." This series will also be sponsored by the Medicine and Religion Committee with the Department of Pastoral Care of the Wilmington Medical Center.
3. A conference on the subject of "Anxiety and Stress in Contemporary Society" is being co-sponsored by the Committee and the Department of Pastoral Care, to be held October 8th, 9th, and 10th at the Academy of Medicine. This conference will bring together speakers from all over the country who have expertise on the subject of "Anxiety," including Rollo May, Ph.D., Charles Spielberger, Ph.D., Irvine Page, M.D., Ned Cassem, S.J., M.D. and Angelo E'Agostino, S.J., M.D. A banquet is being held the first night of the conference, October 8th, in the Gold Ballroom of the Hotel duPont, for physicians, clergymen, and their wives, and all those in the health care profession. This is once again an attempt on the part of the committee to bring together physicians and clergymen around table for program and conversation on the subject of "Medicine and Religion."
4. The Third Annual Prayer Breakfast is planned for the morning of October 27, 1973. It is to be held in the Dining Room of the Home of Merciful Rest. This past year's Prayer Breakfast was well attended with growing interest and support from the Medical Society.
5. Some of the places that members of the committee have spoken on the general subject of "Medicine and Religion" during the past year include: The University of Delaware, Immanuel Baptist Church, Westminster Presbyterian Church, First and Central Presbyterian Church, the Medical Staff Meeting, Elkton Memorial Hospital, Jefferson Medical School, the Wilmington Medical Center, the District of Columbia Committee on Medicine and Religion and the NATO Conference on "Anxiety and Stress in Modern Life," Munich, West Germany.
6. Finally, once again our Chairman has thought to emphasize along with the committee this past year that successful patient care is total patient care. We are trying to emphasize that as one treats simultaneously the illness, the total personality, and the spiritual aspect of the patient, a synergistic combination is created. It is true that the physician has the awesome power of the prescription pad, and the medically-oriented clergyman has his appreciation and understanding of the value and power of the human soul. Thus, the committee seeks to emphasize that we as health care professionals are something to the patient, not just something for an illness.

The committee is grateful to be serving the Medical Society of Delaware in this matter and looks forward with great interest and anticipation to another fine year.

Charles M. Bancroft, M.D., ***Chairman***

L. O. de Bernard, M.D.	**T. C. Scott, D.O.**
R. J. Bishoff, M.D.	**M. E. Traynor, M.D.**
J. Kramer, M.D.	**R. H. Weiss, M.D.**
H. E. Mast, M.D.	**A. C. Wooden, M.D.**
C. L. Minor, M.D.	**The Rev. M. B. Roark**

The Rev. L. L. Swanson

MEDICO-LEGAL AFFAIRS TASK FORCE

The principal effort of the Medico-Legal Affairs Task Force continues to be the activities of the Malpractical Screening Panel. Activity has increased sharply in the past two years, and particularly in the past six months. The increase in activity has made it necessary to have Dr. James Metzger, whose outstanding contributions in this field are well-known to the Society, appointed as Vice-Chairman.

The general committee is concerning itself with the malpractice problem as it exists in the State of Delaware, and a subcommittee is working on the possibilities of data collection enabling a more precise delineation of the problem.

The committee has also recommended that the medical student-intern-resident training programs in Delaware include or expand educational efforts related to the medical-legal aspects of practice.

Dr. Anthony Cucuzzella, Dr. James Metzger, and Dr. Martin Gibbs have attended, as committee members, out-of-town conferences and seminars related to medical-legal affairs, including the meeting of the Secretary's (HEW) Commission on Malpractice that was held in New York.

The report of the Commission is under active study in the anticipation that the Medical Society of Delaware will have an active role to play in the assessment of the report and the application of its recommendations to the State of Delaware.

I should also like to express my preference for some term other than "Task Force" to designate activities of the Medical Society. I find the term somewhat too military and feel that an adequate designation can be found from among the more traditional titles used in parliamentary practice.

Martin Gibbs, M. D., ***Chairman***
J. T. Metzger, M.D., ***Vice-Chairman***

J. A. Arminio, M.D.
G. K. Berger, M.D.
J. L. Campbell, M.D.
S. W. Casscells, M.D.
I. F. Chavin, M.D.
W. B. Cooper, M.D.
R. C. Corbalis, M.D.
A. L. Cucuzzella, M.D.
A. Dworkin, M.D.
S. Franklin, M.D.
C. E. Graybeal, M.D.
A. Z. Hameli, M.D.
R. C. Hayden, M.D.
J. T. Hogan, M.D.
W. R. Johnson, M.D.
E. R. McNinch, M.D.
J. R. McNinch, M.D.
R. L. Meckelnburg, M.D.
D. A. Nelson, M.D.
C. S. Papastavros, M.D.
R. W. Powell, M.D.
H. Rosenblum, M.D.
D. Schetman, M.D.
J. C. Straughn, M.D.
I. T. Tikellis, M.D.
R. H. Weiss, M.D.

O. R. Cook, D.O., Representative
from the Delaware State Osteopathic
Medical Society

MENTAL HEALTH AND ALCOHOLISM

Activities of the Committee during 1972-1973 are as follows:

1. Meetings and consultations with individuals directly and indirectly involved in the Delaware Alcohol Safety Action Project (ASAP) to prevent accidents and deaths on Delaware highways from driving while drunk. Delaware was one of a few states selected by the Federal Government to participate in this multimillion-dollar program.

2. Meetings and consultations with private groups of citizens to plan and start operations of the new Half-way House for Women in Wilmington (a residence similar to Limen House for Men). Also meetings with these same groups and others to plan and start operations of an extensive residential diagnostic treatment and rehabilitation center for alcoholics, male and female.

3. Continuing consultations with the Chairman of the Board of Trustees of the General Conference of Alcoholics Anonymous International on a number of matters related to specific and general activities of AA.

4. Continuing consultations with members of local Alcoholics Anonymous groups on ways to improve the admittance and care of alcoholics in our hospitals.

5. Discussions and consultations with members of the staff of the Beebe Hospal in Lewes, Delaware, concerning the care of alcoholic and mentally ill individuals in their special fifteen-bed unit set up for this purpose.

6. Continuing consultation services in mental health at Ferris School for Boys and assistance to a group of private citizens in planning a program of diagnosis, treatment, and rehabilitation in the recently completed buildings at the Ferris School location.

7. Continuing mental health training seminars for priests in the Episcopal Diocese of Delaware held in Wilmington, the Methodist Manor House in Seaford, and the Beebe Hospital in Lewes, Delaware.

8. Continuing consultation services to several agencies of the Catholic Diocese of Wilmington in the field of mental health.

9. Continuing consultations and training in mental health to the residents and staff of the Methodist Country House in Wilmington and the Manor House in Seaford of the United Methodist Peninsula Conference. These services have been expanded now that the Country House has completed its new Mental Health Center.

10. Consultation services in mental health to patients and staff of the Eugene duPont Memorial Convalescent Hospital.

11. Assistance to various groups in planning a mental health program for a School of Theology in Delaware.

12. The Chairman suggested the members of the Committee report on some of their important work and contributions over this past year. The following replies were received.

A. Howard L. Reed, M.D., Medical Director, Hercules:
   1. Continues as Medical Consultant in Hercules Incorporated's Alcoholism Program.
   2. With respect to mental health he has worked with local psychiatrists in endeavoring to keep the few psychiatric employees on the job and employed if possible.

B. Wilhemina C. Bennett, M.D., Medical Director, Hospital for the Mentally Retarded:
   1. A member of the American Medical Society on Alcoholism and an affiliate member (or soon to become) of the National Council on Alcoholism.
   2. President of the Sussex County Council on Alcoholism.
   3. Consultant to the Sussex County Alcoholism Services, the Corinthian Halfway House in Georgetown, and the Sussex County Correctional Institute Alcoholic Program.
   4. A member of the ADPA of North America.
   5. Active contact with alcoholics and family members' problems. We are also in the process of building up a Detoxification Center.

C. Cristobal Granda, M.D., Medical Director, Governor Bacon Health Center:
   1. As part of his position and responsibilities as Medical Director has given counseling and leadership to his patients and staff.
   2. Has been teaching university medical students during their Clerkship in Psychiatry at the Governor Bacon Health Center.

D. Theofan Kunyckyj, M.D., of the Delaware State Hospital:
   1. Examines without charge alcoholics at the Delaware State Hospital.
   2. Assessed and properly placed patients at workshops sponsored by the Geriatrics Service.
   3. Participated in meetings of the Bureau of Aging in order to assess all geriatrics services.

Thomas H. Hogshead, M.D., *Chairman*

T. M. Alatur, M.D.
F .W. Baker, Jr., M.D.
L. Bales, M.D.
R. H. Beckert, M.D.
W. L. Bennett, M.D.
E. N. Cuba, M.D.
L. O. deBernard, M.D.
J. E. DeLaurentis, M.D.
C. A. Granda, M.D.
K. Gurdikian, M.D.
R. J. Kester, M.D.
T. G. Kunyckyj, M.D.
H. A. Lovett, Jr., M.D.
D. W. MacKelcan, M.D.
I. V. Monteleone, M.D.
J. Z. Pearson, M.D.
H. L. Reed, M.D.
M. E. Traynor, M.D.
W. J. Vandervort, M.D.

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee continues to sponsor its two on-going programs for dissemination of medical information to the public.

The *Ask the Doctor Program* on WDEL is a weekly presentation which has been supported by numerous physicians who have agreed to appear on the program and to discuss various aspects of medical care. They are assisted in this presentation by Mr. Richard Aydelotte, who acts as Moderator and who assists in the mechanics of the program scheduling.

The second of the continuing programs is that of the Explorer Scout Post #530, which has exposed, in greater detail, high school students to aspects of the practice of medicine. This program has had the unstinted backing of David Levitsky, M.D., Patrick Ashley, M.D., John Furlong, M.D., Edwin Katzman, M.D., Jane Straughn, M.D., and Mr. Michael Turner of the Wilmington Medical Center in presenting this program.

A new program of public information has been started on a pilot basis on television Channel 5. The program on this medium will be similar to those which we now support by radio presentation.

A major portion of the Committee's activities this year consisted of the attempt to present to the State Legislature and to the State Insurance Commission educational material concerning the problem of chiropractic and the inappropriateness of its coverage by State-sponsored medical insurance programs. In this difficult, and not altogether successful attempt, we were assisted by the Public Laws Committee.

Thomas S. Vates, Jr., M.D., *Chairman*

R. B. Brereton, M.D.
F. B. L. Haines, M.D.
W. Kraut, M.D.
H. E. Mast, M.D.
R. H. Morgan, M.D.
S. S. Morovati, M.D.
W. F. Renzulli, M.D.
T. C. Scott, D.O.
M. A. Woolley, M.D.

REHABILITATION TASK FORCE*

The Division of Vocational Rehabilitation operates two programs: the Vocational Rehabilitation Service and the Disability Determinations Service. The statutory basis in the Delaware Code is: Title 14., Chapter 33 (as amended through 7-1-73) and Title 29, Chapter 85 (as amended through 7-1-73).

A. Vocational Rehabilitation Service:

The Vocational Rehabilitation Service is a joint state and federally funded program designed to assist disabled residents of Delaware to help themselves and to become independent tax paying, self-respecting individuals. Services provided include medical and vocational diagnosis; counseling; physical restoration (surgery, hospitalization, therapies, prosthetic devices, and other treatments); education and training of all kinds; maintenance and transportation; occupational tools and licenses; selective vocational placement; and vocational follow-up. All services except diagnosis, counseling, and placement are dependent on economic need of the client.

B. Disability Determinations Service:

The Disability Determinations Service provides adjudication of claims for Social Security Disability Benefits and, from this total number, refers appropriate applicants to Vocational Rehabilitation Service. It is supported entirely by Federal funds.

In Fiscal Year 1973, Disability Determinations Service completed investigations of 3,478 applicants for Social Security Disability Benefits. This brings to 28,593 the number of cases adjudicated since this program began in 1955. As a part of each investigation, a determination of rehabilitation potential is completed. Two hundred eighty-two persons (8 per cent of the determinations completed) were referred for Vocational Rehabilitation Services from this source during the year.

Delaware now has a total of 7,363 residents, including dependent wives and children as well as disabled workers, who are receiving annual disability benefits of $10,661,000 through the Social Security Program. It is estimated that in Fiscal Year 1974, the number of residents who will be beneficiaries will increase to about 8,100 individuals and annual total benefits will amount to about $11,727,100.

In addition, 184 "Black Lung" benefit case requests for assistance were completed for Delaware residents who had been handicapped through coal mine employment. There are 374 Black Lung beneficiaries, including dependent wives and children as well as disabled miners, in Delaware who are receiving annual benefits of $630,000.

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*This report has been abridged for the sake of space. The complete report is on file in the Society office and is available to members on request.

Disability Determinations Service work load is expected to increase in Fiscal Year 1974 to approximately 4,800 claims. This total includes 3,600 disabled worker claims and 1,200 Supplemental Security Income ("Welfare") cases which will also be another source for referrals to Vocational Rehabilitation Service. In processing these SSI ("Welfare") claims, our Agency will make extensive use of the Advanced Record System teletype network introduced in Region III this year.

David L. Schafer, M.D., ***Chairman***

G. J. Boines, M.D.
A. A. Boytar, M.D.
H. B. Cates, M.D.
A. L. Cucuzzella, M.D.
H. George DeCherney, M.D.
J. J. Gallagher, M.D.
Karnik Gurdikian, M.D.
J. S. McDaniel, M.D.
V. C. Nah
E. S. Parvis, M.D.
H. L. Reed, M.D.

SCHOOL HEALTH TASK FORCE

The Committee reviewed a report presented by Mrs. Edith Vincent on the status of health education in Delaware with recommendation as to the immediate, continuing, and long-range needs.

The Chairman and Mrs. Vincent met with a representative of Delaware State College regarding courses offered to Health Education majors.

Doctor Mankin and Mrs. Vincent met with Dean Carl, College of Nursing, University of Delaware, to discuss the dilemmas of health education. Dean Carl recommended a meeting to discuss the feasibility of submitting a proposal to promote health through improved health education.

The Committee recommended and the Board of Trustees approved the following: "That the Medical Society of Delaware recommend to the Comprehensive Health Planning Council that a task force, representing the PTA, school nurses, doctors, teachers, and other interested parties, be formed to consider the problem of health services in the public schools and make recommendations as to the direction to be taken."

Arrangements were made with WHYY, Channel 12, for televising a public service announcement fostering tuberculosis screening among children and adults. The announcement was designed to help overcome community complacency and was timed to coincide with school physicals.

John A. J. Forest, Jr., M.D., ***Chairman***

Stanley W. Bilski, D.O.
A. A. Boytar, M.D.
R. W. Frelick, M.D.
E. F. Gliwa, M.D.
Mr. George Glynn
G. R. Hilty, M.D.
W. R. Johnson, M.D.
G. Keppel, M.D.
M. Liebesman, M.D.
Mrs. R. McMullen
Catherine B. Middleton, M.D.
L. C. Mankin, M.D.
E. G. Orton, M.D.
Carl G. Pierce, Jr., M.D.
P. L. Ramsey, M.D.
M. E. Traynor, M.D.
D. T. Walters, M.D.

VENEREAL DISEASE COMMITTEE

Venereal disease continues to increase in Delaware as it has throughout the United States. Your committee is aware of the changing social-moral-sexual patterns contributing to the upsurge in venereal disease, and there is probably little the medical community can do to change these new behavioral patterns. All medical and governmental campaigns won't stop the spread of V.D. unless there is a return to some semblance of morality and restraint in our society. The ultimate control, however, will in all probability depend on the successful development of suitable vaccines. Progress along these lines is encouraging. Your committee urges the physicians of the Medical Society of Delaware to continue to cooperate with public officials in their efforts at case and contact detection, especially now that increased Federal funds are available for these purposes.

Patrick F. Ashley, M.D., ***Chairman***

R. Forlano, M.D.
P. W. Huntington, Jr., M.D.
D. W. MacKelcan, M.D.
E. R. Miller, Jr., M.D.
V. C. Nah, M.D.
R. B. Rodrigue, M.D.
C. Vileisis, M.D.

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS, STATE OF DELAWARE

I was appointed Liaison for the American Association of Medical Assistants, State of Delaware, in October of 1972. My appointment was confirmed by the Medical Society of Delaware at that time.

The annual State Convention of the Association was held on October 7, 1972. I was unable to attend due to prior commitments.

Continuing the program of education, with my endorsement, the Medical Assistants administered the Mini-Test at the above-mentioned convention. This test is a simulated version of the test that all Medical Assistants must take and pass to receive their Certification. On the whole our Delaware Chapter did quite well.

In December of 1972, I attended the annual Bosses' Nite, held at the University and Whist Club. On this particular evening, the Medical Assistants of New Castle County invite their bosses for an evening of entertainment and socializing. I highly recommend this function to anyone who has the opportunity to attend.

During the year the American Association of Medical Assistants, State of Delaware, following the examples set by the National Committee, proposed and adopted several changes in their Constitution and By-Laws. One of the most important of these revisions was the introduction of Osteopaths and their

Medical Assistants into the Association. We welcome them into A.A.M.A. and hope they will benefit from their association with us.

The annual Convention of the A.A.M.A. will be held on Wednesday evening, October 17, 1973, at the Academy of Medicine. The Installation of new officers will take place at that time.

In closing, I urge my colleagues whose employees are members of this Association, to encourage them to participate frequently and enthusiastically in the Association. They as well as their employers will reap the benefits of the activities and programs of the American Association of Medical Assistants.

George P. Liarakos, M.D., ***Liaison***

AMERICAN CANCER SOCIETY DELAWARE DIVISION, INC.

On August 31, 1973, the Delaware Division of the American Cancer Society completed another year of active programming in Delaware.

The Service Program of the ACS received major emphasis in Delaware. A total of 389 cancer patients were helped with drugs, dressings, prostheses, blood counts, nursing and homemaker visits, or transportation. Reach-to-Recovery volunteers called on 70 post-mastectomy patients, and speech classes for larynectomees were held twice monthly in Wilmington and Milford.

The Delaware Tumor Control Centers program became operational on May 1, 1973, with clinics and conferences now held in Beebe, Nanticoke Memorial, Milford Memorial and Kent General Hospitals. St. Francis and Riverside will start their programs shortly. Community hospitals are linked through the automated registry at Wilmington Medical Center to make possible a continuing record of all cancers diagnosed or treated at any Delaware hospital.

In other cooperative community service projects, the Society helps support a community health worker at Southbridge Medical Activities Center and in preventive care services at East Side Health Center.

To provide breast cancer screening by thermography, the Society gave $24,475 local foundation funds to the Wilmington Medical Center for a Spectrotherm. This is the first time this technique is available in Delaware. In addition, a $1,500 grant helped purchase a flexible bronchoscope.

To promote Delaware as a Cancer Center, the Society supported the Wilmington Medical Center's application for a planning grant from National Cancer Institute. Ten thousand dollars of ACS funds were pledged to demonstrate community support.

The American Cancer Society has embarked on a four-year Uterine Cancer project. The goal is a "Pap" test for every woman over 20 by 1976. The Delaware Uterine Cancer Task Force, of which I am chairman, has undertaken a survey of 1.5% of the households in the State. Cancer Society volunteers, under the guidance of the University of Delaware's Department of Urban Affairs, are conducting the survey to determine how many women have had "Paps" in order to plan judiciously. The University's College of Nursing, aided by a $5,000 ACS grant, has started a Continuing Education Course to train nurses in health and physical assessment, including the "Pap" test and breast examination.

Professional Education activities were highlighted by a nurses' conference on "Cancer Awareness" held March 22, 1973 at the Dover Air Force Base; 433 nurses attended. Again this year a group of 38 registered and licensed practical nurses toured New York's Calvary Hospital for advanced cancer patients. They observed the procedures made famous by the Dominican Sisters who operate the facility.

The Kent County Unit of the Cancer Society sponsored its second summer internship in oncology at the Kent General Hospital. Joseph Schlosbon, a senior medical student at Hahnemann Medical College, was this year's recipient of the grant. ACS sponsored two Wilmington Medical Center physicians and the chief resident in medicine at the 7th National Cancer Conference in California. Charles E. Marvil, Director of Social Services, Wilmington General Division attended the Fellowship Program for Social Workers at Memorial Hospital, New York.

Undergraduate scholarships in biological sciences at the University of Delaware amounted to $3,000. Under the Society's sponsorship, a senior nursing student from the University's College of Nursing participated in the cancer work-study program at Memorial Hospital in New York.

Medical libraries in Delaware hospitals and the Academy of Medicine have received more than $1,000 worth of books and publications on cancer.

Public Education programs reached an audience of 60,250 with films and speakers. Of special note were the 13 employee programs at Delmarva Power Company. Another noteworthy program on breast cancer was given to 1,383 duPont employees. Three Toastmaster Clubs are teaming with medical volunteers to bring cancer information to industry and other organizations.

All media continued to publicize the Cancer Society's activities and bring information on research to their readers and listeners. Dorothy Caralivanos of the Weekly Post and Henry Davidson, science writer for the Wilmington News Journal, attended the Science Writers' Seminar at Rio Rico, Arizona.

Rollins Cablevision Channel 5 invited the Society to appear on two half-hour interview programs. Miss Carol Rafferty, R.N., and Mrs. Joan Tatnall, ACS volunteers, answered questions about breast cancer and used the Ortho Pharmaceutical "Betsi" breast model as a teaching tool for breast self examination.

Through a restricted grant, the Society was able to purchase several "Gynny" and "Betsi" models, which are being used to teach the techniques of taking "Pap" smears and breast examinations. In addition, several Fairchild projectors and films have been purchased for use in professional and public education programs.

As Professional Delegate, I represent the Delaware Division of the Cancer Society at National Board and committee meetings. The Society appreciates the Medical Society's excellent support and interest.

Oscar N. Stern, M.D., ***Liaison***

DELAWARE CHAPTER OF THE ARTHRITIS FOUNDATION

Growing national recognition of the widespread incidence of arthritis and its devastating effect on the individual and on the economy has been matched by the efforts of the Delaware Chapter of the Arthritis Foundation to expand its services. A newly organized Board with Jane Roth as President is giving leadership to the program, and a full-time Executive Director is now employed.

The educational program has had major emphasis this year. Christopher Donoho, Jr., M.D., completed his study of Rheumatology under a Chapter grant and is now in practice. Sharyn Baldwin, R.N., was sponsored for a study-observation period at Moss Rehabilitation Center in Philadelphia. A Rheumatology Conference has been initiated at the Delaware Division, Wilmington Medical Center, to provide continuing education for the practicing physician and the house staff. The Chapter has provided films and materials for the nursing curriculum of several schools and hospitals. Other meetings and the distribution of literature have been arranged to provide professional education.

Public education aims at recognition of the warning signs of arthritis and cognizance that a treatment program, if undertaken early, can prevent serious crippling in most cases. Distribution of patient handbooks, education through the public media, the presentation of programs for community groups, and a public forum have been the core of the education program. The Arthritis Foundation also participated in the Charity Days at the Concord Mall, Wilmington.

Patient services consist primarily of referral to physicians and to the Arthritis Clinic, which is held every Thursday morning at the Delaware Division. The Executive Director also provides counseling in financial matters and the availability of rehabilitative aids. As of this fall, a Home Management specialist will make home visits on behalf of the Chapter to help the arthritic cope with problems of daily living.

There is no arthritis research being conducted in Delaware, but one-third of the money raised in Delaware supports our National training and research program carried out in 36 centers across the country. Drastic cutback in Federal funds for arthritis have placed the responsibility for research primarily on private funding through the Arthritis Foundation.

The Arthritis Foundation is in the forefront in the fight to combat our nation's number one crippling disease. It celebrates its 25th Anniversary this year, and urges you to "Help Stop Arthritis Before It Stops You."

Russell J. Labowitz, M.D., ***Liaison***

DELAWARE DIABETES ASSOCIATION

This past year has seen a continuation of all our activities including detection, patient education, children's groups, and sponsoring camperships. In addition, two very successful public meetings were held with George Cahill, M.D. of the Joslin Clinic being presented in the fall and Lester Baker, M.D. of the Children's Hospital of Philadelphia as the speaker this spring.

As a component of the American Diabetes Association we are currently evaluating methods of fundraising and probing the possibility of hiring a full-time Executive Director.

On the national scene we are urging the adoption of federal legislation which has been proposed and which will benefit research and therapy of diabetes.

R. Walter Powell, M.D., ***Liaison***

DELAWARE HEART ASSOCIATION

Under the direction of Dr. Mark G. Cohen, President, the Delaware Heart Association has continued to maintain a variety of programs in community service for the citizens of Delaware. Use of the strep detection service has grown to over 50,000 throat cultures per year with more than 17% of these being judged positive. Delaware Heart has continued to support five rheumatic fever clinics throughout the state, a Special Pediatric Cardiac Clinic at the Delaware Division of the Wilmington Medical Center and the Phonocardioscan Program, which detects abnormal sounds in children. During this last year, the strep detection service was expanded to all Sussex County schools. Delaware Heart has also initiated a Risk Factors Screening Program, which includes a 12-lead EKG, blood pressure, height and weight, a family history form, and blood test to determine cholesterol and triglyceride levels.

Dr. J. O'Neal Humphries was this year's David Flett duPont Memorial Lecturer. The lecture was held in May with the cooperation of the New Castle County Medical Society. A new program for dietitians and nutritionists was initiated this year and will become an annual activity of the Association. The second cardiovascular nurses' teaching seminar was held in May of this year and dealt with pacemakers. Courses in cardiopulmonary resuscitation have been held on a regular basis throughout the state.

Research support has been given to three local projects including the Philadelphia area and to national research programs.

We are deeply appreciative of the support of the members of the Medical Society of Delaware throughout the year.

Richard Lennihan, Jr., M.D., ***Liaison***

DELAWARE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH

The summary from Dr. Wayne Martz, Director of Medical Education for the Wilmington Medical Center, for the undergraduate program is as follows:

1. 400 inquiries for all programs will be processed in 1973-74.
2. The family practice program will have completed an estimated 40 to 50 applications for family practice physicians instituted by the Wilmington Medical Center this year.
3. The growth of the House Staff over the following years is summarized as follows:
   1969-70 67 House Staff — 31 U.S. graduates
   1970-71 81 House Staff — 44 U.S. graduates
   1971-72 81 House Staff — 44 U.S. graduate
   1972-73 95 House Staff — 57 U.S. graduates
   1973-74 102 House Staff — 66 U.S. graduates
   Comment: It is noteworthy to observe that more House Staff could have been accepted by the Wilmington Medical Center in 1973-74, but because of severe financial limitations imposed by price controls on the hospital and limited funds from other sources, an apparent plateau has been reached in the training program.
4. Of the 45 House Staff terminating July 1, 1973, 20 went elsewhere for further training and 25 went into practice. Of the 25 that went into practice, three went into the United States Army, three into practice at a distance and the remainder went into practice nearby. Six were in the oral surgery program. Ten remained in practice in Delaware; five in Wilmington, two in Dover, one in Lewes, one in Rehoboth, and one in Newark. In addition, of the 43 new staff additions to the Wilmington Medical Center, 18 were former members of the Wilmington Medical Center House Staff.

The graduate and continuing educational program for physicians was expanded and has been circulated for 1973 to the members of the Society.

Increasing efforts to continue the training of family physicians, despite diminishing funds, were pursued as the stated primary objective by the Board of Trustees.

The names of the replacements of the retiring board members will be announced at a later date.

Retiring Chairman Charles L. Reese, Jr. and Dr. LeRoy leave the Board feeling that the initial organization and DIMER's early development have followed the spirit of the legislative act in blending the resources of the State of Delaware and its cooperating partners—the Wilmington Medical Center, the University of Delaware, and Jefferson Medical College of the Thomas Jefferson University.

Pierre L. LeRoy, M.D., ***Liaison***

DELAWARE INTERAGENCY COUNCIL ON SMOKING AND HEALTH

The Delaware Interagency Council on Smoking and Health continued its active educational role during the past year. Programs were especially directed at our schools where medical speakers, films, literature, posters, and displays were provided. The Council made note during the year of the outstanding service that Mrs. Robert Frelick is performing in our schools. The Council continues to participate in numerous in-service meetings for teachers as part of the state requirement for teacher training in the area of alcohol, drugs, and tobacco. The Council urges physicians not to smoke, certainly not to smoke in the presence of patients. Physicians should do everything possible to discourage smoking, particularly among youth and adolescents.

Patrick F. Ashley, M.D., ***Liaison***

DELAWARE LUNG ASSOCIATION

The Delaware Lung Association has contributed $150.00 to the Continuing Medical Education Seminars for Physicians and participates with the Academy of Medicine in sponsoring the Infectious Disease Symposium.

James M. Hofford, M.D., ***Liaison***

DELAWARE NURSES' ASSOCIATION

During this past year I have met several times with the Delaware Nurses' Association. The primary topics of discussion have been nursing home coverage, a joint practice committee, the medical practice act, physicians' assistants and nurse clinicians, and seeking ways to improve nurse and physician professional relationships.

Needless to say, by their titles alone these subjects and others not mentioned certainly indicate that the profession of nursing along with the profession of medicine has become extremely complex. This fact leads me to recommend to the Medical Society of Delaware the establishment of a Joint Practice Committee of Physicians and Nurses, so that there can be the broadest base possible for interaction and decision making. Such action has been brought to the attention of the Board of Trustees. However, to make it work we will need grassroots support and participation by the membership.

William H. Duncan, M.D., ***Liaison***

EASTER SEAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS OF DELAWARE

I have met with Mr. Guion Miller, Executive Director, Easter Seal Society for Crippled Children and Adults of Delaware, and he informed me that his greatest need is an *active* medical advisory committee to meet two or three times yearly. Mr. Miller states that the doctors can set any date or choose any city in Sussex County for their meeting, and he will be happy to attend at their convenience.

I believe the Medical Society can do a great service for the Sussex County residents by advising on the many medical problems that arise in the areas covered by the therapists from the Easter Seal Society's Center in Georgetown.

Arthur J. Heather, M.D., ***Liaison***

MEDICAL ADVISORY COMMITTEE, DIVISION OF SOCIAL SERVICES, STATE OF DELAWARE

Report of Activities of the Medical Advisory Committee 1972-1973

At the December 20, 1972 meeting the salient points were:

1. Introduction of significance of H.R.1, the Social Security Amendments of 1972.
2. PSRO a function of the Delaware Foundation for Medical Care.
3. Updating of the Children's Dental Program. It will include all children to age 21 after July 1, 1973.
4. Educational program is now the way taken to develop a voluntary drug formulary.

Emphasis at the meeting of March 21, 1973 was on:

1. Review of the William O. LaMotte, Jr., M.D. report.
2. An attempt was made to add to the Advisory Committee's scope of influence — namely to ask health institutions throughout the State to make appearances before this committee.

Change in the Advisory Committee was seen in the actions of June 20, 1973:

1. Members of the committee missing three of its four meetings will be replaced by new appointments.
2. Dr. Gliwa was asked to explore the possibility of utilizing private as well as public facilities for the care of long-term nursing care patients.
3. No further mention was made of review of health care institutions as outlined at the March 1973 meeting.

The September 19, 1973 meeting was the first attempt of the Medical Advisory Committee to assert itself beyond the scope of just answering to the requirements of Medicaid and Medicare. The Committee passed a resolution (without a dissenting vote) to aid the Secretary of Health and Social Services in decision-making by asking that he use public hearings before he cuts off any public health programs from the department's budget. (See attachment)

Later the drug program of the Title XIX (Medicaid) dependents was presented by Mr. David Krigstein and Mr. Martin Golden. By the time the report is in Mrs. Bader's office I hope Mr. Krigstein's entire report, complete with drug lists, will also be in her office to be incorporated with this report.

Mr. James Harvey gave an outline of the now-in-practice Nursing Home Survey and Medical Review. This report suggests tighter controls in nursing homes that will demand more physician time and effort on the usual government demand and control without any consideration of the physician's time and involvement.

Finally we considered the problems of the Delaware law concerned with involuntary sterilization. (Copies of the Delaware Code available in the Society office.)

Rhoslyn J. Bishoff, M.D., ***Representative***

Attachment

Report of the Resolution Made by the Medical Advisory Council of the Department of Health and Social Services

Advisory Committee resolves to advise the Secretary of Health that no already started or mandatory service should be discontinued, but cutting down on the budget should be across the board and not eliminate any programs already activated. (A smaller budget is advised for all.)

Programs may be discontinued after advertised public hearing.

Mr. Krigstein's Report

Background:

The payment for health services by a third party intermediary to a provider usually follows a protocol involving the verification of information supplied by the provider to the intermediary prior to the payment for service. Although this protocol is satisfactory to some parts of the health system, it has proved cumbersome and inefficient in the area of pharmaceutical services, because of the number of claims and the smaller dollar cost per claim. The protocol for Title XIX, followed until July 1, 1972, produced a cost to the intermediary (Blue Cross-Blue Shield of Delaware, Inc.) of an average of $.40 per claim processed and a cost to the provider (the pharmacist) of 8 to 10 week delay in reimbursement. At the end of each fiscal year this delay time often extended to 12 to 16 weeks. In September of 1971, Rep. J. Billingsley (R) became concerned about the administrative cost of the program. His staff performed a study and made recommendations to improve the administration of the pharmaceutical component of the Title XIX program. His staff recommended that the introduction of a multiple claim would reduce cost approximately 10-15%. The cost saving actually accrued at the expense of the provider pharmacist, although the system was not designed with this in mind. The program began in January of 1972. The procedure involved more time on the part of the provider and the payment cycle had not been reduced, in fact in some instances it had increased. This new system led to conferences among interested parties, to resolve the problems and to devise a system that would accomplish benefits for all. It was at this time that the Alabama draft system established, tested and proved, was explored in great detail. The conclusion was the Alabama system had been proven and was applicable to the Title XIX program in Delaware.

Present System for Drug Claim Processing:

On July 1, 1972 the new draft system for drug payments under Title XIX was initiated. The goals of the new system were:

1. Reduction of administrative cost.
2. Reduction of payment cycle.
3. Collection of data to produce patient profile, a physician profile and a pharmacist profile of drug utilization.
4. Use of this collected data to manage the system.
5. Study of the feasibility of
    a. A prescription drug list.
    b. A non-prescription (OTC) drug list.
    c. A prescription drug list with maximum allowable cost as a management tool for Title XIX system either separately or collectively.

The year of experience has produced 4 of 5 goals that were set. We are now at that juncture where we must manage the system. We have proved that you can reduce administrative costs, reduce the time of the payment cycle, collect all necessary data. The management goal must now be achieved.

Management Process:

Now, we must take the next step, namely the production of a list of drugs that will be covered for payment. The responsibility rests with us to manage the system that has been produced by this bank of data. The list will be disseminated to the prescribing and dispensing professions and will encompass all therapeutic categories that will afford the patient quality medication and also allow for cost containment for the expenditures of State and Federal funds. The State of Delaware Health Institutions have initiated a system to produce similar results and their document will be employed in developing the list for Title XIX. Our program should produce the following results, taking one step at a time, so that we build upon a solid foundation:

1. Production of a system that provides for the requirements of all participants.
2. Sophisticated audit.
3. Drug List.
4. Non-Prescription (OTC) List.
5. Drug List with cost containment.
6. Rational drug therapy.
7. Drug Utilization and Review (Patient review, drug abuse, Nursing Home U and R vs Private).
8. Peer review.

David J. Krigstein
Pharmacist Consultant

MENTAL HEALTH ASSOCIATION

During the past year I have had the opportunity to attend two meetings of the Board of Trustees of the Mental Health Association and in addition to visit the psychiatric facilities of the Beebe Hospital with the former executive director, Mr. Charles Sikorski. Mr. Sikorski accepted a new position this summer and has been replaced as executive director by Dr. Lowell Streiker.

During the summer the Association moved to its own building and is now located at 1813 N. Franklin Street. Several interesting programs are under way. One is the Mental Health Employment Development group, which will attempt to help with industrial placement of people who have suffered mental disorders. In addition, a Mental Health Association patient advocate program has been established, and the Association is represented on the grounds of the Delaware State Hospital by Mrs. Harriet Hoffman. Both of these programs could prove to be very helpful for those who have been patients at the Delaware State Hospital.

Richard J. Kester, M.D., *Liaison*

SPINA BIFIDA ASSOCIATION OF DELAWARE

The Spina Bifida Association of Delaware has been active during the past year with educational meetings and service projects. Members of the Medical Society have been kind enough to speak to the Association at a number of their regular meetings.

The Spina Bifida Association has, as one of its main purposes, reaching new parents of children with spina bifida or hydrocephalus. The members of the Spina Bifida Association would be pleased to be in touch with parents of these children as soon as possible after birth so that the members of the Association might help the parents cope with the psychological trauma involved, and also help the parents realize that although these children have many problems and many hurdles to face, they can live active lives. The Association feels that new parents need to meet other parents with the same problem to realize that they are not facing this situation alone. The Association wishes to stress that it does not, nor does it wish to, offer any medical advice, but only wishes to encourage and guide families in meeting the day-to-day problems which those members with older children have already faced. Physicians may contact the association through its president, William Sheing, P. O. Box 266, New Castle, Delaware 19720.

The Association has two booklets entitled "Your Child with Hydrocephalus" and "Your Child with Spina Bifida." These booklets written by Dr. John Lorber are designed for parents and are available through the Spina Bifida Association of Delaware. Anyone in the Medical Society who would like a copy of these booklets may obtain them by contacting Mrs. Harry Tandy (655-1382) or Mrs. William Horleman (478-5869).

Henry R. Cowell, M.D., *Liaison*

NOMINATING COMMITTEE

A meeting of the Nominating Committee was held at the Delaware Academy of Medicine on September 11, 1973, and October 2, 1973 to consider positions to be filled for the year October 1973 through October 1974.

The following nominations were made:
Vice-President — David A. Levitsky, M.D.
Secretary — Calvin B. Hearne, M.D.
Treasurer — Peter R. Coggins, M.D.
Representative to the
Delaware Academy
of Medicine — Herbert M. Baganz, M.D.

FOR STANDING COMMITTEES:

Budget Committee

Alfred E. Bacon, Jr., M.D.
Conley L. Edwards, M.D.
Lawrence Katzenstein, M.D.
Thomas A. Vates, Jr., M.D.

Publications Committee

Robert B. Flinn, M.D.
William J. Holloway, M.D.
Richard H. Morgan, M.D.
Bernadine Z. Paulshock, M.D.
William A. Taylor, M.D.

Public Laws Committee

Allston J. Morris, M.D.
John W. Alden, Jr., M.D.
Herbert M. Baganz, M.D.
John H. Benge, M.D.
Rhoslyn J. Bishoff, M.D.
Norman L. Cannon, M.D.
Peter R. Coggins, M.D.
Edward S. Dennis, M.D.
Christopher R. Donoho, M.D.
Thomas E. Dyer, M.D.
Edward F. Gliwa, M.D.
Ali Z. Hameli, M.D.
Calvin B. Hearne, M.D.
Vincent Lobo, D.O.
Marjorie J. McKusick, M.D.
Peter J. Mette, M.D.
Gerald J. Savage, M.D.
Hugo B. Schwandt, M.D.

Program Committee

Bruce L. Bolasny, M.D.
Robert B. Flinn, M.D.
Palmarin C. Francisco, M.D.
Jose Pamintuan, M.D.
Bernadine Z. Paulshock, M.D.
W. Philip Portz, M.D.
David N. Sills, Jr., M.D.

Medical Services Insurance Committee

R. Walter Powell, M.D.
Joseph A. Arminio, M.D.
John H. Benge, M.D.
I. Favel Chavin, M.D.
Neil A. de Leeuw, M.D.
Thomas E. Dyer, M.D.
Conley L. Edwards, M.D.
Robert E. Erb, M.D.
Martin Gibbs, M.D.
C. E. Graybeal, M.D.
O. Keith Hamilton, M.D.
John T. Hogan, M.D.
Alfred Lazarus, M.D.
John M. Levinson, M.D.
Howard H. Lyons, M.D.
Matthew J. McDermott, Jr., M.D.
Robert L. Meckelnburg, M.D.
Walter W. Moore, M.D.
Christos S. Papastavros, M.D.
Edward M. Phillips, D.O.
David Platt, M.D.
Oleh Sluzar, M.D.
Harry Taylor, M.D.
Joel R. Temple, M.D.
I. J. Tikellis, M.D.
Howard Wilk, M.D.

Medical Review Subcommittee

Conley L. Edwards, M.D.
R. Walter Powell, M.D.
Daniel A. Alvarez, M.D.
Jason L. Campbell, M.D.
Richard T. D'Alonzo, M.D.
John T. Hogan, M.D.
F. B. Lane Haines, M.D.
Alfred Lazarus, M.D.
John M. Levinson, M.D.
Walter W. Moore, M.D.
Edward M. Phillips, D.O.
David Platt, M.D.
Felix R. Santiago, M.D.

Board of Medical Examiners

Charles S. Riegel, M.D.
Marvin V. Andersen, Jr., M.D.
Robert Waterhouse, M.D.
Thomas S. Vates, Jr., M.D.
William E. Miller, M.D.
Roger B. Thomas, Jr., M.D.
Alfred Lazarus, M.D.
William D. Shellenberger, M.D.
Douglas W. McKelcan, M.D.
Dewey A. Nelson, M.D.

Delegate — American Medical Association —
Henri F. Wendel, M.D.
(term expires 12/31/75)

Alternate Delegate—American Medical Association—
Rhoslyn J. Bishoff, M.D.
(term expires 12/31/75)

William J. Vandervort, M.D., *Chairman*
J. J. Egan **R. F. Lewis, M.D.**
J. B. Geissinger, M.D. **T. S. Vates, Jr., M.D.**

Resolutions considered at the House of Delegates Meeting will be published in the January 1974 issue of the *Delaware Medical Journal.*

President's Page

PSRO BEGINS

From the moment that Congress passed the PSRO legislation, much controversy, confusion, and speculation have resulted. This subject has been discussed at all levels of organized medicine, and that discussion need not be repeated.

Doctor Henri Wendel, Doctor Joseph Belgrade, and I attended the American Medical Association Scientific Convention in Anaheim, California, December 1 through 4, 1973. The PSRO issue was debated at great length and was in the center ring during the entire meeting. Senator Bennett, a Republican from Idaho, who introduced the PSRO concept, spent three hours privately presenting his reasons for this legislation.

In summary, if Congress is going to spend $30 billion in Medicare and Medicaid, it is willing to spend $500 million to make sure this investment is spent wisely. If the government is interested in quality medical care, let us work with them through physician's peer review to give quality medical care to the American public.

The Board of Trustees of the Medical Society of Delaware will devote part of each meeting over the next year to launch PSRO in an effective manner. We have spent much time discussing this program with key nonmedical people throughout the state. So let us now implement PSRO in Delaware.

1. We shall endeavor to have each Hospital Utilization Review Committee appoint one person from that Committee to make up the Utilization Committee of the Delaware Foundation for Medical Care.

2. Each elective hospital admission shall receive some form of preadmission review.

3. An internal audit will be developed for hospitalized patients along the lines already in use in Washington State. This will serve to verify quality medical care in our hospitals.

As this program develops, the physicians in Delaware will be fully informed in advance, and any and all suggestions will be utilized.

William J Vandervort MD

Letters to the Editor

To the Editor:

In last month's *Journal* (45:323) a letter to the editor appeared essentially extolling the virtues of radiation therapy for skin cancers as opposed to surgery. I certainly agree with the statement in that article that . . . "the careful evaluation of each individual case will invariably indicate which of the two procedures (surgery or radiotherapy) is the best for that particular patient." Nevertheless, several statements were made which I consider to be inaccurate and misleading and in need of correction.

Contrary to the statement made in last month's letter to the editor, radiation therapy does produce scarring. The area of treated skin is scarred, white, and atrophic, larger in area than the original lesion and obviously visible. It is ordinarily much larger and more obvious than a surgical scar produced by simple excision. Further, this scar does not improve with time as does the surgical scar. These radiation scars are produced with current techniques. Radiation must be delivered to the area of the tumor and to a surrounding area to insure complete elimination of the lesion. No amount of filtration or difference in technique can limit the damage to the skin when the skin is the organ receiving therapy. Important structures which have been invaded by the tumor heal by scar formation following radiation therapy. These structures do not regrow or reconstruct their former appearance. Reconstruction following surgery is generally satisfactory and gives a better cosmetic result than the significant deformity produced by the tumor and perpetuated by the scar following radiotherapy.

Radiation therapy definitely confers on the skin the propensity for the further development of skin cancer. Radiation-induced cancer is almost always an absolute contraindication for more radiation therapy. This position, while not held by all radiotherapists, is held by most other physicians treating cancer of the skin.

Location of the skin cancer is definitely an important criterion in deciding whether surgery or radiation is more appropriate for the treatment of the specific lesion. In questionable cases, the opinion of a surgeon who is trained in tumor removal and in reconstruction and who is aware of the value of radiotherapy in certain tumors is essential. Lesions of the nose, orbit, and ears are generally better treated by surgery. In these areas, certain lesions in certain patients will be best treated by radiotherapy. Prior evaluation by a surgeon trained in both ablative and reconstructive procedures in the head and neck is essential.

Carcinoma of the skin is the most common tumor, and yet little of it is treated by radiotherapists. Most lesions that are small are adequately treated by curettage and electrodessication, and those that are somewhat larger may be treated by simple excision and closure. Surgical treatment of a great majority of lesions requires only a single operative procedure and a few office visits with minor risk to the patient and a resultant scar that is usually linear or in the case of curettage and electrodessication, quite small. For reasons noted above, most tumors requiring complicated reconstruction are still more properly treated by surgery. Actual current practice is heavily weighted in favor of this point of view.

Finally, it is important to remember that the best treatment must be individualized for each patient and that this can best be brought about by cooperation between specialists in different disciplines who can combine their knowledge and expertise for the proper treatment of difficult cases.

Neil A. de Leeuw, M.D.

To the Editor:

To assess the need for a medical school for Delaware on the basis of projections of the total number of physicians in the State and nation as Dr. William Vandervort has done (*Delaware Medical Journal*, October, 1973) is an unfortunate and inaccurate over-simplification. For each reference cited by Dr. Vandervort in support of his thesis that there is an adequate supply of physicians, it is possible to cite ten references to the contrary.

But playing the numbers game in this fashion is foolish and unproductive. It would be far better, for example, to give consideration to the type of physician rather than to numbers alone. A recent tally of "primary care" physicians in Delaware including family practitioners, pediatricians, and internists, based on figures supplied by the State Medical Society, indicates a ratio of 40 primary care physicians per 100,000 population in New Castle County, 20 per 100,000 in Kent, and 25 per 100,000 in Sussex. These ratios are far short of the national average of 59-65 per 100,000 and of the suggested ideal of 133 per 100,000 (*New England Journal of Medicine*, Vol. 286, 1973). In 1970, only two of thirty applicants for licensure in Delaware were trained in medical schools in the United States. In 1971, there were two of forty-four; in 1972, nine of 96. A report by the bureau of Health Manpower Education in 1972 indicates that in the fiscal year 1971, more physicians entered the United States from abroad (10,540) than were graduated from all American medical schools (8,974). Without regard for the effect of this brain drain on the countries in which these physicians were trained or for other considerations, the existence of this army of foreign-trained physicians has delayed constructive criticism of the need for and utilization and distribution of American-trained physicians along the lines indicated above.

The major reason for the development of a University-based, in-state medical education program is the improvement of health care in Delaware. The program would not simply graduate a designated number of physicians each year, but would provide on-going, locally responsive educational and research expertise in support of the practicing physicians who form the focal point of the health care delivery system. Rather than play numbers games, let us take a hard look at the benefits provided by an in-state, University-based science and clinical faculty, by the strengthening of the staffs of regional community hospitals with medical educators, basic scientists, physicians, medical students and well-trained house officers. Let us carefully consider the costs and benefits of our present limited "rented" program of medical education and contrast these with those of an in-state program which utilizes and expands the facilities of the University of Delaware and extends throughout the state as an integral component of health care for Delaware citizens.

William V. Whitehorn, M.D.
Dorothy H. Henneman, M.D.

* * *

To the Editor:

In the October, 1973, issue, the President's Page article entitled "Too Many Physicians" cited results of the Delaware Health Services Authority's physician access study in support of the view that the physician supply in Delaware has finally approached a healthy balance. The article also stated that the survey "served to contradict the general impression that it is downstate where access to physicians is most difficult."

As a physician, I was generally pleased with the access picture disclosed by the survey. And while it may be true that "the shortage of physicians is over," I do not believe that the DHSA survey can be a decisive factor in reaching that conclusion.

The survey dealt only with one phase of the time barrier to physician access—specifically, how long it would take a person without an established relationship to get an appointment with a general practitioner, internist, or pediatrician. As the survey report pointed out, it did not deal with financial or transportation barriers to primary care. Neither did it deal with informational or sociological-motivational barriers which deter people from trying to access the system.

According to the Household Survey performed by the University of Delaware's Division of Urban Affairs under sub-contract with the Experimental Health Services Delivery Systems in the Department of Health, Education and Welfare, approximately 10,000 people in the State of Delaware did not see a physician last year for either lack of money or transportation. These are people who have been unable to enter the system, and whether we have enough physicians for that group is a moot point.

In addition, it is fairly clear from what is happening at the new primary care center at Nanticoke Hospital, and from the burgeoning utilization rate at emergency centers throughout the State, that many people are sidestepping the traditional practice of visiting the physician's office.

However, I heartily agree with Dr. Vandervort that good solid data is needed before Delaware embarks down the path of building its own medical school. Such a project would cost millions of dollars, to which all the State's taxpayers would have to contribute. If the facts establish that there is indeed a projected lack of primary care physicians in the State over the next decade — a lack that could perhaps be quantified — then one can rationally propose alternate solutions. The possible expansion of DIMER might be one alternative, using State resources for the active recruitment of physicians from surplus areas elsewhere might be another, and the construction of a medical school might indeed be another alternative. In any event, all alternatives should be examined and measured in terms of cost and possible benefits so that one can get the best results for the people of Delaware at the least expense.

Rhoslyn J. Bishoff, M.D., *President*
Delaware Health Services Authority

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To the Editor:

The editorial "Diabetes: Then and Now" (August 1973 *Delaware Medical Journal*) is a very concise resume of a number of problems in diabetes, which rightfully should be pointed out to primary physicians. I share your concern about labelling individuals as diabetic, where the definitive reality of the diagnosis may be questioned.

I can't agree more with the idea of avoiding fear as a motivating factor. I suspect, however, that a redefinition of "normals" would depend on new, inexpensive, reproducible laboratory techniques which do not presently exist. The question as to a definition of diabetes is still to be answered.

Arthur Krosnick, M.D., *Editor*
Journal of the Medical Society
of New Jersey

* * *

DEATH FROM SUICIDE

Suicide has ranked among the 12 leading causes of death in the United States for a number of years, despite appreciable understatement in the reporting of suicides.

Each year approximately 22,000 persons in the United States take their own lives. In 1972 the suicide rate was estimated at 11.7 per 100,000.

When account is taken of unsuccessful suicide attempts — variously estimated from 4 to 10 times the number of reported suicides — the magnitude of the suicide problem is clearly very much greater than indicated by the official statistics.

Statistical Bullet
Metropolitan Life
August 1973

Editorials

THE MARCH OF METRICATION

I know how sick a person is whose temperature is 105°F; I also know that he's afebrile with 98.6°, Fahrenheit that is. I know he's fat if he's over 150 pounds and he's tall if over 72 inches. It's a whole new way of life to learn that fever is anything over 37°C, obesity over 68 kg, and tallness over 183 cm.

But have you imagined the new expressions?

"Give them 25.4 millimeters and they'll take 1.6093 kilometers."

"1.524 meters 50.8 millimeters, eyes of blue, has anybody seen my gal?"

The above gems were prepared by Aerospace Industries Association, who estimate that even before the recent formal trend to metrication, 45% of all aerospace companies have been using meters instead of feet, centimeters instead of inches.

In medicine, we first had to learn to write for medications in milligrams and grams instead of apothecary measures. Now we must learn to understand temperatures in degrees C instead of F, and in kilograms instead of pounds.

There is a silver lining; somehow 90.9 kg doesn't sound as fat as 200 pounds. But will it also soon be "How many kilometers to the liter?" for gasoline — and will we be calling it petrol?

B.Z.P.

* * *

TOO MANY PHYSICIANS!

Elsewhere in this Journal appear letters to the editor regarding the President's Page entitled "Too Many Physicians" in the October issue. I agree that there are references pro and con on this subject.

To label those who differ with you as foolish suggests that your position is indeed unstable. To label the statistics of the opposition as "playing the numbers game" and then to present your own numbers, is an attempt to muddy the issue rather than permit a scholarly debate.

W.J.V.

* * *

CEFAZOLIN

Cefazolin is the first of the new cephalosporin preparations to be released for general use by the Food and Drug Administration. This new cephalosporin antibiotic has a tetrazolylacetyl side chain on the amino group and a 5-methyl-thiadiazolylthiomethyl group on the three position of 7-aminocephalosporanic acid. This formulation has several characteristics which make it an interesting new antibacterial agent.

Cefazolin has been shown *in vitro* to have increased activity against certain strains of *Escherichia coli* and *Klebsiella pneumoniae,* though it is somewhat less effective than cephalothin against many strains of *Staphylococcus aureus.* Some clinical isolates of *Escherichia coli* which are resistant *in vitro* to cephalothin have been shown to be susceptible to cefazolin. In our laboratory, cefazolin appears to be the most active cephalosporin agent against the majority of strains of *Escherichia coli,* though the clinical significance of this observation has not yet been established.

Cefazolin has a serum half-life of approximately 160 minutes, which is significantly longer than the half-life of any of the currently available cephalosporins. Cefazolin is approximately 75 percent bound to serum protein and gives the highest peak serum levels of any of the cephalosporins, the average mean peak serum level after one gram intramuscularly being 60 mcg/ml, and after one gram intravenously, 130 mcg/ml.

Cefazolin has been reported to produce less pain following intramuscular injection and less phlebitis following intravenous injection than cephalothin. Additional well-controlled clinical trails will be necessary to confirm this assertion.

Cefazolin does not appear to be nephrotoxic, and adverse side effects have been minimal. Positive Coombs' tests do occur in patients receiving cefazolin, and thrombocytosis has been reported.

Limited *in vitro* studies have suggested that cefazolin is less cross-allergenic to benzylpenicillin than the other cephalsporin antibiotics. Again, more extensive clinical investigation will be necessary to confirm this important observation.

The experience with cefazolin in the treatment of infections due to susceptible organisms suggests that this is a satisfactory agent resembling cephalothin in efficacy.

The high blood level and prolonged serum half-life of cefazolin inspired the hope that this agent might be valuable in the treatment of gonorrhea. However, local and national studies indicate that this agent, even when combined with probenecid, can not be used for the single dose treatment of gonococcal urethritis.

At the present time, it would appear that the major advantage of cefazolin is the need to dose less frequently with this agent when compared to cephalothin. More experience will be necessary before the clinician should indiscriminately substitute cefazolin for cephalothin in the critically ill patient.

A number of other cephalosporin antibiotics with interesting pharmacodynamic characteristics are currently under investigation. If these additional agents are made available to the clinician, he may find proper antibiotic selection even more difficult. There is no conclusive evidence to date that any of these new cephalosporins, including cefazolin, represents significant improvement over previously available formulations.

W.J.H.

* * *

Deaths

DOUGLAS TREAT DAVIDSON, M.D.

Dr. Douglas Treat Davidson, 85, died at his home in Claymont, Delaware, on September 11, 1973. Born in Augusta, Georgia, on October 19, 1887, the son of the late William Treat and Carolin (Wetmore) Davidson, he was graduated from The Lawrenceville School in 1905 and from Yale College with the degree of B.A. in 1909 where he was a member of Phi Beta Kappa.

After two years at the Harvard Medical School he completed his medical studies at the Medical School of the University of Pennsylvania where he received the degrees of M.D. in 1913 and of D.P.H. in 1914. He was a member of Alpha Omega Alpha, the medical honorary society, and served his internship at the University of Pennsylvania Hospital.

In 1911 he was married in Philadelphia to the former Ellen Hooker of Philadelphia, who died on February 19, 1968. She was also a physician, having graduated from the Woman's Medical College in Philadelphia, but she never practiced medicine.

Between 1915 and 1919 Dr. Davidson taught as a medical missionary at the Hunan College of Medicine in Chang-sha, China, also known as "Yale-in-China," With his family, he returned to the United States because of a severe tropical illness from which he never completely recovered. He devoted the next 50 years to the practice of general and industrial medicine in Claymont and retired at the age of 70. He had been President of the New Castle County Medical Society, Secretary of the Medical Society of Delaware, an honorary staff member of the Wilmington Medical Center, and a fellow of the American Medical Association. He long served as Superintendent of the Sunday School and as a Vestryman and Warden of the Church of the Ascension in Claymont, and as President of the Church Club of Delaware, an organization of Episcopal laymen. For many years he and his late wife maintained a summer home in Rockport, Massachusetts.

Although he never considered himself a practicing allergist, he, because of a personal experience, became an expert in the field of food allergy. He maintained close contact with the local allergists of his era.

He considered his years in China as a medical missionary the most important in his life. It was a keen disappointment when he gave up this life-long dream.

A deeply religious, completely unselfish physician, with humble dignity and a great sense of humor, he would have been comfortable with today's theme of total patient care: Body, mind, and soul.

He is remembered by one of his interns from the late 1930's, as a physician having unusual calmness and unlimited patience with those who were suffering. He never hurried from the patient's room.

He is survived by a son, Samuel H. Davidson, M.D. of Seattle, Washington; two daughters, Mrs. Elizabeth Benson of Williamsburg, Virginia, and Mrs. Margaret Holtan of Freeport, Illinois; 13 grandchildren and eight great-grandchildren; his brothers, William Treat Davidson of Warren, Pennsylvania and Sidney Wetmore Davidson of Brooklyn Heights, New York. His oldest child, Douglas T. Davidson, Jr., M.D. died in 1964. A grandson, Douglas T. Davidson, III, is a physician in Seattle, Washington.

Charles M. Bancroft, M.D.

* * *

HAROLD V. RAYCROFT, M.D.

Dr. Harold V. Raycroft, 82, of Redwood City, California died June 18, 1973 in California.

Dr. Raycroft was a specialist in chest diseases and genito-urinary diseases and an alumnus of State University of New York Downstate Medical Center. He served as a surgeon in the U.S. Army Medical Corps for 35 years. In World War II he served in the Aleutian Islands Campaign. He was also a charter member of the American College of Surgeons and was a surgeon at Hassler Hospital, Redwood City, California from 1954 to 1963.

Dr. Raycroft practiced in Rehoboth Beach, Delaware from 1963 to 1969, where he was a member of the staff of Beebe Hospital, Lewes, Delaware.

* * *

NATURAL SELECTION: WHAT DARWIN REALLY SAID

> As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be *naturally selected.* From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form.

Ashley Montagu
Man, His First Two Million Years
Columbia University Press, 1969

Delaware Academy of Family Physicians

PSYCHIATRIC SEMINARS

A seminar workshop series of ten sessions in Wilmington and five sessions in Dover for non-psychiatric physicians to improve skills of diagnosis, understanding and management of psychiatric problems will be sponsored by Jefferson Medical College of the Thomas Jefferson University, the Delaware Academy of Family Physicians, and the Wilmington Medical Center. The seminars will be held from 1 to 3 p.m., Wednesdays, January 16 - March 20, 1974, in the 3rd Floor Conference Room of the Wilmington General Division, Wilmington Medical Center, Chestnut and Broom Streets, Wilmington and 12 to 2:30 p.m., Wednesdays, January 16 - February 13, 1974, in the Staff Room of the Kent General Hospital, Dover. The program is acceptable for twenty prescribed hours in Wilmington and twelve-and-a-half prescribed hours in Dover by the American Academy of Family Physicians.

DOVER PROGRAM

January 16	The Runaway Among Juveniles — Among Adults Abraham A. Freedman, M.D.
January 23	Recognition and Management of Schizophrenic Symptoms Nicholas P. Bash, M.D.
January 30	The Acute Psychiatric Patient in the Emergency Room Martin B. Kassell, M.D.
February 6	Predicting Suicide H. George DeCherney, M.D.
February 13	Mental Impairment of Function in the Aged — Management and Treatment Maurice E. Linden, M.D.

WILMINGTON PROGRAM

January 16	Newest Interviewing Techniques — Doctor-Patient Relationship for Diagnosis and Brief Psychotherapy Floyd S. Cornelison, M.D.
January 23	The Management of the Psychiatric Unit in the Wilmington Medical Center V. Terrell Davis, M.D.
January 30	Predicting Suicide H. George DeCherney, M.D.
February 6	The Runaway Among Juveniles — Among Adults Abraham A. Freedman, M.D.
February 13	Recognition and Management of Schizophrenic Symptoms Nicholas P. Bash, M.D.
February 20	The Acute Psychiatric Patient in the Emergency Room Martin B. Kassell, M.D.
February 27	Drugs — Use and Abuse William A. Rutter, M.D.
March 6	The Management of Violence in Schools Ora R. Smith, M.D.
March 13	Mental Impairment of Function in the Aged — Management and Treatment Maurice E. Linden, M.D.
March 20	The M.D. Faces Sex — Sexual Problems in Marriage Charles Strahan, Jr., M.D.

In Brief

Speakers on "Ask the Doctor"

Speakers for January, 1974 on the Tuesday radio program (11:05 a.m., WDEL) produced by the Medical Society of Delaware are: January 8, *Marvin V. Andersen, Jr., M.D.*, Culposcopy; January 15, *Maurice Thew, M.D.*, Hair Loss; January 22, *Harry J. Repman, M.D.*, Cystitis; January 29, *William F. Renzulli, M.D.*, Arthritis.

In the News

The Board of Visitors of the University of Virginia Medical School have established an Alfred R. Shands, Jr. Orthopedic Professorship. Doctor Shands was graduated from the University of Virginia School of Medicine in 1922.

Kazuo K. Kimura, Ph.D., M.D., an active member of the Medical Society of Delaware, who most recently has served on the Public Laws and Publications Committees and the Drug Abuse Task Force, has moved to Vienna, Virginia, a suburb of Washington, D.C. Doctor Kimura is now Vice President and Scientific Director of Hazleton Laboratories, Inc., a subsidiary of Environmental Sciences Corporation.

CLINICAL NOTICES AND MEETINGS

Cardiology Congress

The Seventh World Congress of Cardiology will be held in Buenos Aires, Argentina, September 1-7, 1974. The Congress, held every four years, represents an important worldwide exchange of information on the advances in the prevention and treatment of cardiovascular diseases. For information write: Thomas McGuire Enterprises, 605 East Algonquin Road, Arlington Heights, Illinois, 60005.

Med-Ed Congress

The AMA's 70th Annual Congress on Medical Education will be held at the Palmer House in Chicago, Illinois, February 1-3, 1974. For information write: American Medical Association, Division of Medical Education, 535 North Dearborn Street, Chicago, Illinois, 60610. Deadline for room reservations is January 16, 1974

Gastroenterology Conference

The Symposia Medica Foundation presents an International Conference on Clinical Problems in Gastroenterology, to be held in Jerusalem and Rome, March 14-24, 1974. For further information write: Ms. Cynthia Soika, M.A., Projects Director, Symposia Medica Foundation, 305 East 24th Street, New York, New York, 10010.

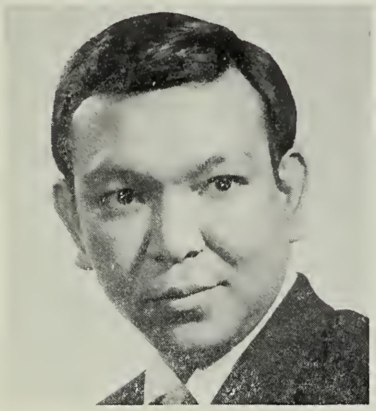
Pulmonary Course

"Practical Clinical Pulmonary Physiology," will be held at Case Western Reserve University School of Medicine, Cleveland, Ohio, January 30-February 1, 1974. The course is sponsored by the American College of Chest Physicians, the American Thoracic Society, the Ohio Lung Association, and the Case Western Reserve University School of Medicine. Registration fees are $100 for members of ACCP or ATS and $125 for non-members. For registration information write: Bradford W. Claxon, M.Ed., Director of Continuing Education, American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois, 60611.

New Members

Augusto A. Amurao, M.D., a graduate of the University of the Philippines College of Medicine, '59, is a Board-Certified General Surgeon. He served his internship at Grant Hospital in Chicago and his residency at Pennsylvania Hospital in Philadelphia. His office is in the Professional Building in Wilmington. Doctor Amurao, his wife, and their three children live in suburban Wilmington. Doctor Amurao's interests include stamp collecting, music, and cycling.

Joel R. Temple, M.D., a graduate of Jefferson Medical College, '60, is a Board-Certified Internist with special interest in pulmonary disease and allergy. He served his internship and residency at Duke University Medical Center. He previously practiced medicine in Fairmont, West Virginia before coming to Dover. His office is at 637 South Governors Avenue, where he is associated with Charles Allen, M.D. and Norman Jones, M.D. Doctor Temple, his wife, and their five daughters live in Dover. Doctor Temple enjoys hunting, fishing, swimming, and reading.



Basilio Nery Bautista, M.D., a graduate of the University of Santo Tomas, Philippines, '60, served his internship at Memorial Medical Center, Niagara Falls, New York. He then served four surgical residencies in the eastern United States and a plastic surgery residency at the University of Manitoba, Canada. A Plastic Surgeon, Doctor Bautista's office is at 1001 South Bradford Street, Dover, Delaware. He lives in the Dover Country Club Apartments. His interests span the visual arts, music, and travel.

Elvira Lacado-Pamintuan, M.D., a graduate of the Faculty of Medicine and Surgery, University of Santo Tomas, Philippines, served her internship at Christ Hospital, Jersey City, New Jersey, and her residencies at Margaret Hague Maternity Hospital and Philadelphia General Hospital. A Board-Eligible Obstetrician and Gynecologist, Doctor Pamintuan and her husband, Jose C. Paminutan, M.D., an Internist, have an office at Cannon and Popular Streets, Seaford. The Pamintuans have four children and live in Atlanta Estates in Seaford.

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v.45,1973.

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